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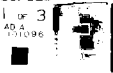

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East Hartford, Connecticut 06108

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R81-914388-16

[redacted] Data Report. ~~Vol. II~~ - Velocity and Temperature Profile Data for Accelerating, Transitional Boundary Layers.

Contract No. F49620-78-C-0064
Project - Task 2307/A4
61102 F

REPORTED BY M. F. Blair
M. F. Blair

APPROVED BY M J Werle
M. J. Werle

DATE January 1981

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TURBULENT BOUNDARY LAYERS
FREE-STREAM TURBULENCE
LONGITUDINAL PRESSURE GRADIENT
HEAT TRANSFER
VELOCITY PROFILES
TEMPERATURE PROFILES

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

Experimental research has been conducted to examine the combined effects of free-stream turbulence and favorable pressure gradients on flat-wall transitional boundary layers. Convective heat transfer coefficients, boundary layer mean velocity and temperature profile data, and wall static pressure distribution data were obtained for four combinations of free-stream turbulence intensity and favorable pressure gradient. Free-stream multi-component turbulence intensity, longitudinal integral scale, and spectral distributions were obtained for the various test cases. Mean velocity and temperature profile data for the

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individual boundary layer traverses are presented in this report.

R81-914388-16

[redacted] Data Report - Vol. II
Velocity and Temperature Profile
Data for Accelerating, Transitional Boundary Layers

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FOREWORD

This report was prepared for the Air Force Office of Scientific Research, United States Air Force by the United Technologies Corporation Research Center, East Hartford, Connecticut, under Contract F49620-78-C-0064, Project Task No. 2307/A4 61102 F. The performance period covered by this report was from 1 June 1978 to 31 January 1981. The project monitors were Dr. D. G. Samaras and Dr. James Wilson.

INTRODUCTION

Experimental research has been conducted to examine the combined effects of freestream turbulence and favorable pressure gradients on flat-wall transitional boundary layers. Convective heat transfer coefficients, boundary layer mean velocity and temperature profile data and wall static pressure distribution data were obtained for four combinations of freestream turbulence intensity and favorable pressure gradient. Data were obtained for freestream turbulence intensities of approximately 2% and 4% for an acceleration level of $K = \nu/U^2 \, \partial U/\partial x = 0.75 \times 10^{-6}$ and for turbulence intensities of approximately 1% and 2% for an acceleration level of $K = \nu/U^2 \, \partial U/\partial x = 0.20 \times 10^{-6}$. Freestream multi-component turbulence intensity, longitudinal integral scale, and spectral distributions were obtained for the various test cases. A comprehensive report containing a description of the experimental equipment, a presentation of the reduced data and an analysis of the results is available in Ref. 1.

Mean velocity and temperature profile data for the individual boundary layer traverses are presented in this report.

DESCRIPTION OF BOUNDARY LAYER DATA REDUCTION SYSTEM

A computer program has been written which reduces, plots, and tabulates the velocity and temperature boundary layer profile data obtained by the UTRC Boundary Layer Wind Tunnel Data Acquisition System. Following is a brief description of this reduction program.

(a) Mean velocities (U) are measured with miniature flattened pitot probes. These velocities are corrected for probe Reynolds number and wall blockage effects using the results of Refs. 2, 3, and 4. Except for those measurements extremely close to the wall ($y \sim < 0.010$ in.) the corrections were less than 1% of the measured velocity. The maximum velocity correction (5%) resulted for the case of the probe touching the wall.

(b) Friction velocities (U_τ) for each profile are determined by a least squares fit of the velocity profile data from $50 \sim < y+ \sim < 500$ to the "law-of-the wall".

$$\frac{U}{U_\tau} = \frac{1}{\kappa} \ln \frac{yU_\tau}{\nu} + C \qquad (1)$$

where $\kappa = 0.41$
$C = 5.0$
as recommended by Coles (Ref. 5).

Using this value of U_τ the velocity and temperature data are plotted in universal coordinates $u^+ = \frac{U}{U_\tau}$ and $t^+ = \frac{(T_w - T)\rho_w C_p \sqrt{\tau_w/\rho}}{q_w}$ vs. $y^+ = \frac{yU_\tau}{\nu}$. The velocity profile data are compared with Eq. (1) and the temperature data with Eq. (2).

$$t^+ = Pr_t \left(\frac{1}{\kappa} \ln y^+ + C + P_s \right) \qquad (2)$$

where $Pr_t = 0.9$
$\kappa = 0.41$
$C = 5.0$
$Ps = -2.0$

(c) The following integral properties are determined

(i) displacement thickness $\delta^* = \int_0^\delta \left(1 - \frac{\rho U}{\rho_e U_e}\right) dy$

(ii) momentum thickness $\theta = \int_0^\delta \frac{\rho U}{\rho_e U_e}\left(1 - \frac{U}{U_e}\right) dy$

(iii) energy-dissipation thickness $\delta^{**} = \int_0^\delta \frac{\rho U}{\rho_e U_e}\left(1 - \frac{U^2}{U_e^2}\right) dy$

(iv) enthalpy thickness $\delta_H = \int_0^{\delta_1} \frac{\rho U}{\rho_e U_e}\left(\frac{T - T_e}{T_e}\right) dy$

(v) kinematic displacement thickness $$\delta_K^* = \int_0^\delta \left(1 - \frac{U}{U_e}\right) dy$$

(vi) kinematic momentum thickness $$\theta_K = \int_0^\delta \frac{U}{U_e}\left(1 - \frac{U}{U_e}\right) dy$$

(vii) Clauser delta $$\Delta = \int_0^\delta \left(\frac{U_e - U}{U_\tau}\right) dy$$

(viii) Clauser shape parameter $$G = \frac{1}{\Delta} \int_0^\delta \left(\frac{U_e - U}{U_\tau}\right)^2 dy$$

Measurement of velocity profile data very close ($y+\sim<30$) to a wall is difficult because of the extremely large local velocity gradients and the finite probe tip size. For the velocity profiles measured in this program a flattened impact probe with a probe tip height of approximately 0.007 in. is employed. This tip height corresponds to $\Delta y+\approx 10$ for most of the profiles (depending on the individual profile U_τ). Because the true distance from the wall to the effective center of the probe tip is uncertain (uncertainty of approximately ±0.001 in.) the recommendation of Coles (Ref. 6) has been followed and the integral thicknesses are evaluated using standard sublayer functions very close to the wall. For values of $y+<35$ (approximately three probe tip heights) the integral thicknesses are evaluated using the standard velocity sublayer and buffer zone function of Burton (Ref. 7).

$$y^+ = U^+ + \left(\frac{U^+}{8.74}\right)^7 \tag{3}$$

The thermocouple boundary layer probes are constructed with 0.001-in.-dia sensing elements. Because of this design, accurate temperature data can be obtained very close to the wall (for some profiles even within the viscous sublayer). For this reason it has been possible to use measured temperature data for evaluation of the integral thicknesses from $y+ = 5$ to the edge of the boundary layer. For $y+<5$ (viscous sublayer) the integral thicknesses are evaluated using Eq. (4).

$$t^+ = Pr\, U^+ \tag{4}$$

(d) The profile "wake strength" (Π) is determined from an iterative solution of two "local friction law" formulations from Coles (Ref. 6).

(i) $$\frac{U_e}{U_\tau} = \frac{1}{\kappa} \ln \frac{\delta U_\tau}{\nu} + C + \frac{2\Pi}{\kappa}$$

(ii) $$\left(\frac{\frac{\delta^* U_e}{\nu} - 65}{\frac{\delta U_\tau}{\nu}}\right) = 1 + \Pi$$

Since the term $\frac{u_\tau \delta}{\nu}$ can be eliminated from Eqs. (i) and (ii) all that is required to solve for Π are values of Ue, U_τ, and δ^*.

The wake component

$$W = \frac{\kappa}{\Pi}\left[\frac{U}{U_\tau} - \left(\frac{1}{\kappa}\ln y^+ + C\right)\right] \tag{5}$$

is plotted vs. $\frac{y}{\delta}$ and compared to Coles (Ref. 6) zero pressure gradient wake function

$$W = 2\sin^2\left(\frac{\pi}{2}\frac{y}{\delta}\right) \tag{6}$$

(e) Defect velocities are calculated using the value of U_τ determined in (b).

$$\text{Velocity defect} = \frac{U - U_e}{U_\tau}$$

The velocity defect distribution is plotted vs. $\frac{y}{\delta}$ and compared with inner and outer region defect correlations.

(i) In the inner region ($\frac{y}{\delta} < 0.2$) with the correlation of Schubauer and Tchen (Ref. 8).

$$\frac{U-U_e}{U_\tau} = \frac{1}{\kappa}\ln\left(\frac{y}{\delta}\right) - 2.35 \tag{7}$$

(ii) in the outer region ($\frac{y}{\delta} > 0.2$) with the correlation of Hama (Ref. 9)

$$\frac{U-U_e}{U_\tau} = -9.6\left(1-\frac{y}{\delta}\right)^2 \tag{8}$$

(f) The following is a list of all plots constructed, including those discussed in parts (b), (d), and (e):

i) $\frac{U}{U_e}$ vs $\frac{y}{\delta}$

ii) $\frac{T_w - T}{T_w - T_e}$ vs $\frac{y}{\delta}$

iii) U^+ vs Y^+ (see b)

iv) T^+ vs Y^+ (see b)

v) $\frac{U-U_e}{U_\tau}$ vs $\frac{Y}{\delta}$ (see d)

vi) W vs $\frac{y}{\delta}$ (see e)

(g) The following boundary layer values are tabulated

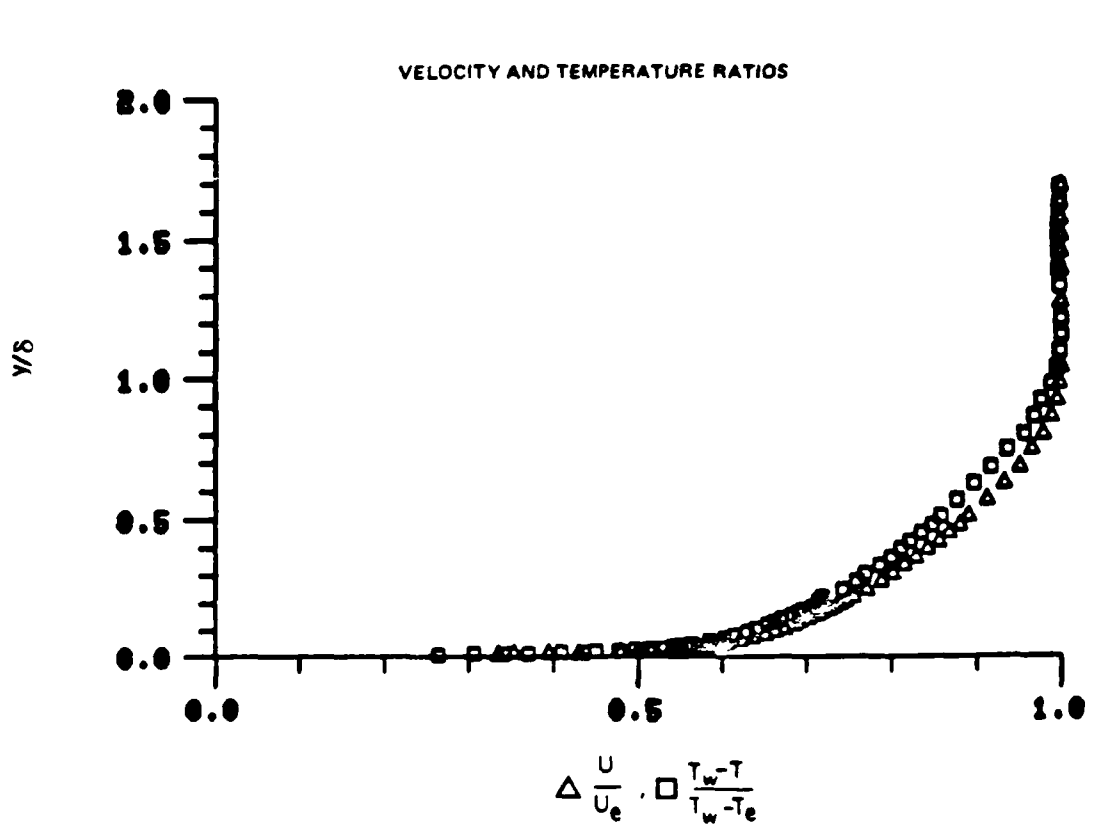
$$y,\ \frac{y}{\delta},\ U,\ T,\ \frac{U}{U_e},\ \frac{T_w-T}{T_w-T_e},\ \frac{U-U_e}{U_\tau},\ U^+,\ Y^+,\ T^+$$

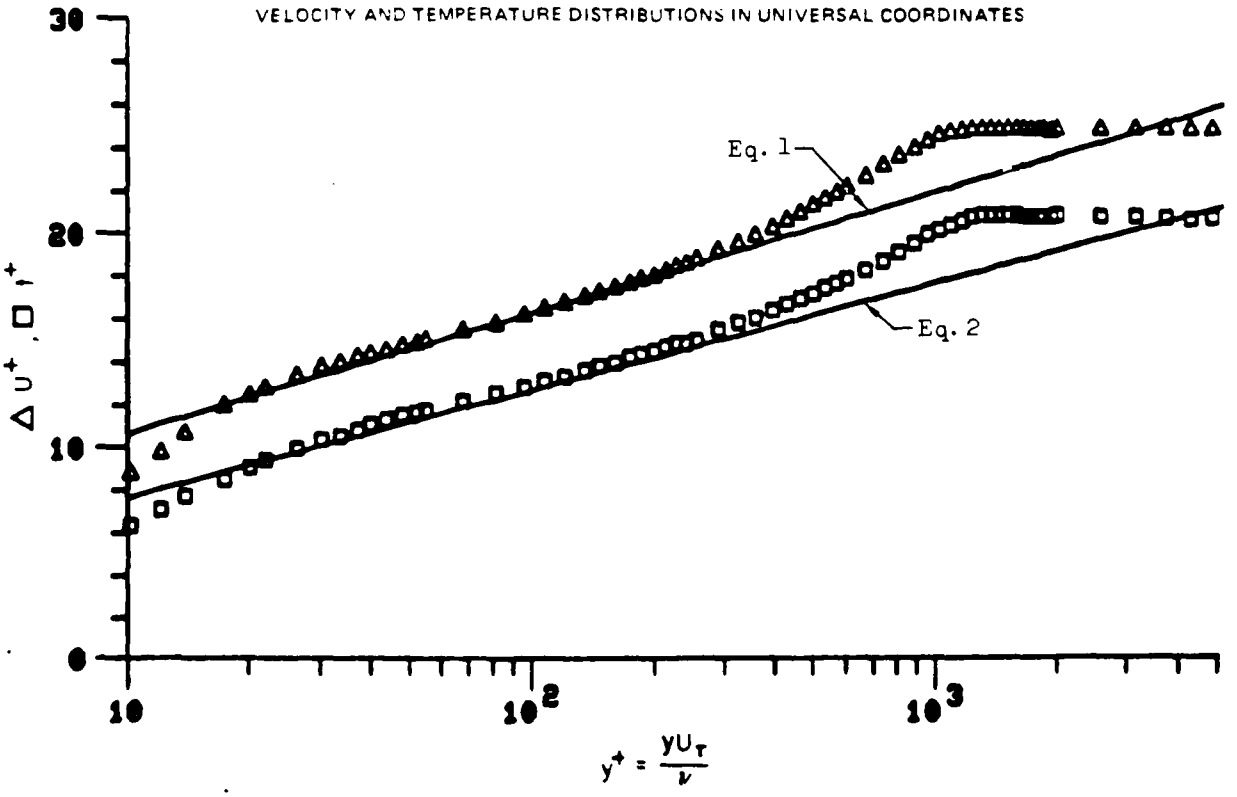
Sample reduced boundary layer profile data

Typical mean velocity and temperature boundary layer profile data obtained in the UTRC Boundary Layer Wind Tunnel with the test section adjusted for zero pressure gradient flow are presented in the following example figures. For these example figures the various analytical curves are labeled with their respective equation numbers.

Laminar and Transitional Boundary Layer Profile Data

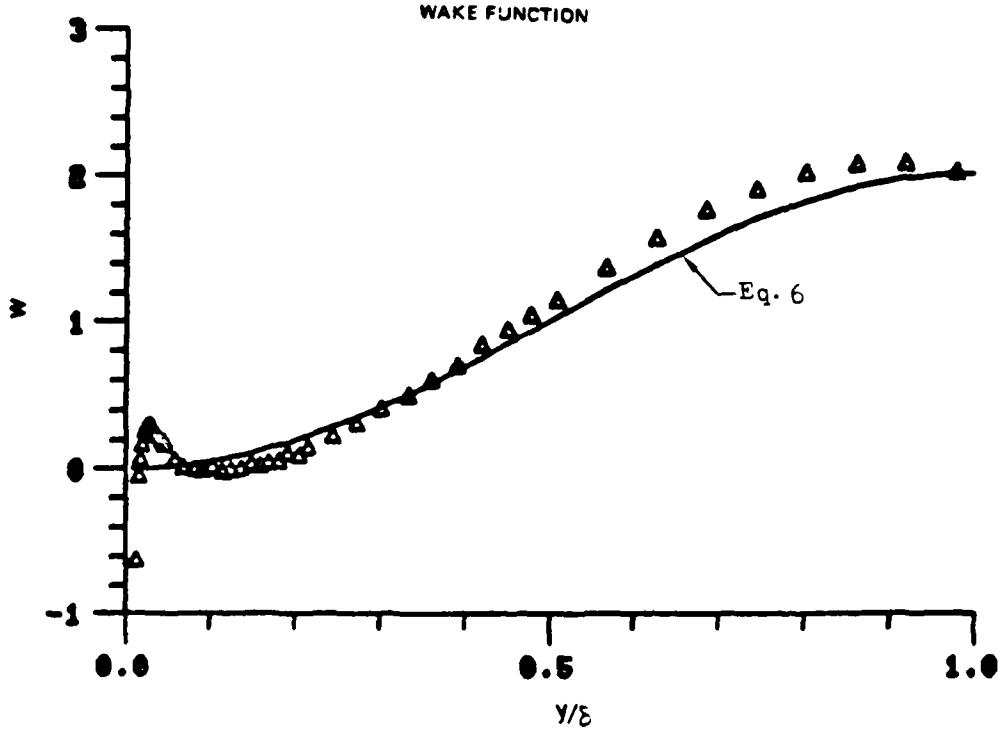
For those profile stations where the boundary layer was either laminar or transitional the previously described turbulent "law-of-the-wall" analysis is inapplicable. For those profiles the data are plotted as velocity and temperature ratios only. Tabulated values are given for the measured velocities, temperatures, velocity and temperature ratios, and for the calculated integral values of the boundary layer profiles.

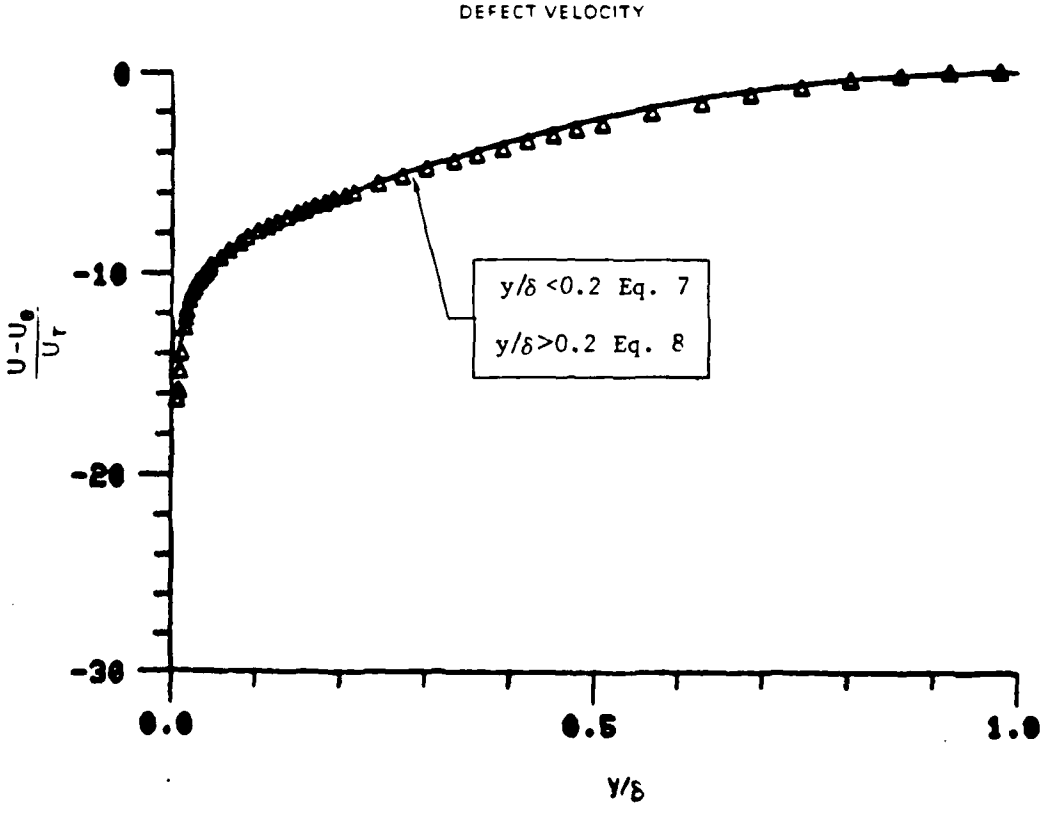




Example Profile Plot A - Typical Boundary Layer Velocity and Temperature Profiles

78-12-100-1





Example Profile Plot B - Typical Boundary Layer Velocity Profiles

78-12-100-2

LIST OF TABLES AND FIGURES

Table & Figure No.	Grid No.	Acceleration $K \times 10^6$	Run No.	Point No.	X (Inches)	Re_θ
1	1	0.2	2	23	12.4	340
2				21	16.4	361
3				22	16.4	390
4				20	24.4	471
5				17	28.4	486
6				18	28.4	522
7				19	28.4	514
8				16	32.4	552
9				13	36.4	622
10				15	36.4	632
11				12	40.4	726
12				9	44.4	819
13				10	44.4	874
14				11	44.4	816
15				8	48.4	995
16				5	52.4	1171
17				6	52.4	1150
18				7	52.4	1084
19				2	60.4	1485
20				3	60.4	1538
21				1	68.4	1800
22	2	0.2	1	26	4.4	226
23				25	8.4	299
24				7	8.4	310
25				5	8.4	307
26				24	12.4	403
27				9	16.4	519
28				10	16.4	516
29				11	20.4	737
30				12	20.4	702
31				13	20.4	715
32				14	24.4	951
33				15	36.4	1489
34				17	36.4	1518
35				18	48.4	1934
36				19	60.4	2313
37				20	60.4	2344
38				21	60.4	2343
39				22	68.4	2473
40	2	0.75	3	4	12.4	279
41				5	12.4	277
42				6	12.4	266
43				7	16.4	310
44				9	20.4	364
45				10	20.4	335
46				11	24.4	377
47				12	28.4	434
48				13	28.4	434
49				14	28.4	424
50				15	32.4	486
51				16	36.4	562
52				17	36.4	532
53				19	40.4	638
54				20	48.4	850
55				21	48.4	825
56				22	48.4	820
57				23	56.4	995
58	3	0.75	4	19	4.4	134
59				20	4.4	140
60				15	8.4	292
61				16	8.4	285
62				17	8.4	297
63				12	12.4	390
64				13	12.4	359
65				14	12.4	406
66				10	16.4	496
67				11	16.4	540
68				9	24.4	747
69				6	32.4	995
70				7	32.4	890
71				8	32.4	857
72				5	40.4	997
73				2	48.4	1093
74				3	48.4	1100
75				4	48.4	1073
76				1	56.4	1142

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JOB KLDM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 23. GRID NO. 1

BOUNDARY LAYER PROPERTIES

		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	55.542	55.542
FREE STREAM TEMPERATURE	=	74.734	
WALL TEMPERATURE	=	112.150	
WALL HEAT FLUX	=	.04250	
FREE STREAM DENSITY	=	.07500	
FREE STREAM KINEMATIC VISCOSITY	=	.0001641	
DENSITY OF FLUID AT WALL	=	.07009	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001849	
WALL/FREE STREAM DENSITY RATIO	=	.93457	
LOCATION REYNOLDS NUMBER (REX)	=	349666.94	
INPUT VALUE OF VELOCITY DELTA	=	.11500	
INPUT VALUE OF TEMPERATURE DELTA	=	.11500	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.11000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.02964	.02250
MOMENTUM THICKNESS (THETA)	=	.01205	.01243
ENERGY-DISSIPATION THICKNESS	=	.01940	.02107
ENTHALPY THICKNESS	=	.00083	.00115
SHAPE FACTOR 12 (DELSTAR/THETA)	=	2.40971	1.80940
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.60979	1.69468
MOMENTUM THICKNESS REYNOLDS NUMBER	=	339.87	350.64
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	818.98	634.44
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.41874	-.36962
CLAUSERS 'G' INTEGRAL	=	4.74538	2.56191
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02620	.02135
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01239	.01280
SHAPE FACTOR 12 - CONSTANT DENSITY	=	2.11523	1.66750

LOCATION -X- 12.40000

Z = CENTERLINE

$K = 0.2 \times 10^{-6}$

Table 1.

J06 KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 23. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0040	.037	6.73	107.71	.121	.119
2	.0056	.051	9.13	106.76	.164	.144
3	.0072	.066	10.79	105.49	.194	.178
4	.0081	.074	11.73	104.79	.211	.197
5	.0099	.090	14.06	103.55	.253	.230
6	.0118	.108	15.96	101.97	.287	.272
7	.0138	.126	18.75	100.57	.338	.310
8	.0156	.142	20.81	99.25	.375	.345
9	.0170	.155	21.77	98.30	.392	.370
10	.0186	.171	23.65	96.93	.426	.407
11	.0211	.192	25.98	95.46	.468	.446
12	.0231	.210	28.06	94.16	.505	.481
13	.0247	.225	29.46	92.99	.529	.512
14	.0309	.281	34.30	89.23	.618	.613
15	.0376	.344	39.22	85.54	.706	.711
16	.0448	.408	43.53	82.52	.784	.792
17	.0508	.462	46.35	80.57	.834	.844
18	.0560	.526	49.16	78.53	.885	.898
19	.0649	.590	51.16	77.18	.921	.935
20	.0712	.646	52.74	76.40	.949	.956
21	.0782	.711	53.64	75.78	.966	.972
22	.0851	.774	54.52	75.37	.982	.983
23	.0910	.826	54.70	75.12	.985	.990
24	.0982	.893	55.08	74.96	.992	.994
25	.1050	.955	55.29	74.92	.995	.995
26	.1112	1.011	55.39	74.81	.997	.998
27	.1178	1.071	55.45	74.74	.998	1.000
28	.1249	1.136	55.64	74.74	1.002	1.000
29	.1422	1.293	55.54	74.72	1.000	1.000
30	.1596	1.451	55.48	74.74	.999	1.000
31	.1768	1.608	55.49	74.74	.999	1.000
32	.1949	1.772	55.59	74.75	1.001	1.000
33	.2124	1.931	55.54	74.74	1.000	1.000
34	.2302	2.093	55.51	74.73	.999	1.000
35	.2472	2.248	55.45	74.73	.998	1.000
36	.2650	2.409	55.49	74.74	.999	1.000
37	.2823	2.567	55.55	74.74	1.000	1.000
38	.3002	2.729	55.55	74.73	1.000	1.000
39	.3297	2.998	55.54	74.73	1.000	1.000
40	.3601	3.274	55.63	74.74	1.002	1.000
41	.3900	3.546	55.49	74.74	.999	1.000
42	.4203	3.821	55.49	74.73	.999	1.000
43	.4500	4.091	55.49	74.74	.999	1.000
44	.4803	4.367	55.46	74.73	.999	1.000
45	.5101	4.638	55.44	74.74	.998	1.000
46	.5402	4.911	55.59	74.74	1.001	1.000
47	.5699	5.181	55.50	74.73	.999	1.000
48	.6000	5.455	55.51	74.73	.999	1.000
49	1.0802	9.820	55.59	74.74	1.001	1.000
50	1.5598	14.180	55.30	74.73	.996	1.000
51	2.0400	18.546	55.28	74.72	.995	1.000
52	2.5196	22.906	55.15	74.74	.993	1.000
53	3.0001	27.274	55.16	74.72	.993	1.000

Table 1.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 21. GRID NO. 1

BOUNDARY LAYER PROPERTIES

		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	56.997	56.997
FREE STREAM TEMPERATURE	=	74.722	
WALL TEMPERATURE	=	114.350	
WALL HEAT FLUX	=	.04070	
FREE STREAM DENSITY	=	.07500	
FREE STREAM KINEMATIC VISCOSITY	=	.0001641	
DENSITY OF FLUID AT WALL	=	.06982	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001862	
WALL/FREE STREAM DENSITY RATIO	=	.93097	
LOCATION REYNOLDS NUMBER (REX)	=	474620.14	
INPUT VALUE OF VELOCITY DELTA	=	.11500	
INPUT VALUE OF TEMPERATURE DELTA	=	.15000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.11000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03015	.02371
MOMENTUM THICKNESS (THETA)	=	.01247	.01295
ENERGY-DISSIPATION THICKNESS	=	.02020	.02198
ENTHALPY THICKNESS	=	.00115	.00152
SHAPE FACTOR 12 (DELSTAR/THETA)	=	2.41730	1.83078
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.61968	1.69735
MOMENTUM THICKNESS REYNOLDS NUMBER	=	360.96	374.73
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	872.54	686.05
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.44025	-.38966
CLAUSERS 'G' INTEGRAL	=	4.96802	2.70892
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02704	.02219
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01289	.01341
SHAPE FACTOR 12 - CONSTANT DENSITY	=	2.09786	1.65550

LOCATION -X- 16.40000

Z = CENTERLINE

K = 0.2 X 10^{-6}

Table 2.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 21. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0039	.036	5.71	111.09	.10[illegible]	.062
2	.0053	.046	7.82	110.82	.137	.097
3	.0060	.055	9.52	110.01	.167	.110
4	.0077	.070	11.54	108.86	.203	.136
5	.0092	.084	13.46	107.78	.236	.166
6	.0100	.091	14.43	107.32	.253	.177
7	.0122	.111	16.79	105.83	.295	.215
8	.0139	.127	19.25	104.71	.338	.243
9	.0159	.145	21.49	103.41	.377	.276
10	.0176	.160	23.21	102.42	.407	.301
11	.0191	.174	24.76	101.38	.434	.327
12	.0209	.190	26.58	99.97	.466	.363
13	.0231	.210	28.74	98.66	.504	.396
14	.0251	.228	30.41	97.19	.534	.433
15	.0266	.242	31.94	96.06	.560	.461
16	.0329	.299	36.46	92.41	.639	.554
17	.0400	.364	41.09	88.38	.724	.655
18	.0472	.429	45.26	85.13	.794	.737
19	.0521	.483	47.83	82.98	.839	.792
20	.0595	.544	50.26	81.14	.882	.838
21	.0669	.608	52.17	79.85	.915	.861
22	.0731	.665	53.66	77.89	.942	.920
23	.0800	.728	54.65	76.77	.959	.948
24	.0872	.793	55.55	76.09	.976	.965
25	.0928	.844	56.02	75.75	.983	.974
26	.1000	.909	56.36	75.42	.989	.982
27	.1070	.973	56.70	75.21	.995	.988
28	.1128	1.026	56.93	75.05	.999	.992
29	.1202	1.093	56.91	74.94	.998	.994
30	.1269	1.154	56.96	74.90	.999	.996
31	.1441	1.310	57.13	74.75	1.002	.999
32	.1616	1.469	57.12	74.73	1.002	1.000
33	.1791	1.628	57.20	74.71	1.004	1.000
34	.1968	1.789	57.10	74.72	1.002	1.000
35	.2138	1.944	57.29	74.72	1.005	1.000
36	.2319	2.108	57.13	74.72	1.002	1.000
37	.2492	2.266	57.29	74.72	1.005	1.000
38	.2671	2.428	57.25	74.71	1.004	1.000
39	.2842	2.584	57.17	74.72	1.003	1.000
40	.3018	2.744	57.10	74.73	1.002	1.000
41	.3316	3.015	57.08	74.73	1.002	1.000
42	.3620	3.291	57.07	74.73	1.001	1.000
43	.3921	3.565	57.22	74.73	1.004	1.000
44	.4219	3.836	57.10	74.72	1.002	1.000
45	.4522	4.111	57.11	74.72	1.002	1.000
46	.4823	4.385	57.12	74.74	1.002	.999
47	.5119	4.654	57.04	74.72	1.001	1.000
48	.5416	4.925	57.14	74.75	1.003	.999
49	.5719	5.199	57.07	74.74	1.001	1.000
50	.6020	5.473	57.13	74.74	1.002	.999
51	1.0820	9.837	57.12	74.74	1.002	1.000
52	1.5619	14.199	56.95	74.74	.999	1.000
53	2.0418	18.562	56.93	74.73	.997	1.000
54	2.5217	22.925	56.80	74.72	.997	1.000
55	3.0024	27.295	56.97	74.72	.998	1.000

Table 2.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 22. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	56.997	56.997
FREE STREAM TEMPERATURE =	74.568	
WALL TEMPERATURE =	114.200	
WALL HEAT FLUX =	.04020	
FREE STREAM DENSITY =	.07502	
FREE STREAM KINEMATIC VISCOSITY =	.0001640	
DENSITY OF FLUID AT WALL =	.06964	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001861	
WALL/FREE STREAM DENSITY RATIO =	.93094	
LOCATION REYNOLDS NUMBER (REX) =	474861.75	
INPUT VALUE OF VELOCITY DELTA =	.15000	
INPUT VALUE OF TEMPERATURE DELTA =	.17000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.12000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03234	.02564
MOMENTUM THICKNESS (THETA) =	.01347	.01419
ENERGY-DISSIPATION THICKNESS =	.02183	.02398
ENTHALPY THICKNESS =	.00109	.00138
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.40037	1.80700
SHAPE FACTOR 32 (ENERGY/THETA) =	1.61992	1.68995
MOMENTUM THICKNESS REYNOLDS NUMBER =	390.12	410.84
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	936.43	742.38
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.48312	-.43524
CLAUSERS 'G' INTEGRAL =	5.60813	3.11775
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02909	.02426
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01384	.01457
SHAPE FACTOR 12 - CONSTANT DENSITY =	2.10261	1.66457

LOCATION -X- 16.40000

Z = +6 INCHES

$K = 0.2 \times 10^{-6}$

Table 3.

JOB KLUM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 22. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.036	4.90	5.02	.086	2.755
2	.0053	.044	6.41	24.35	.112	2.267
3	.0063	.053	8.37	100.72	.147	.340
4	.0073	.061	10.13	109.37	.178	.122
5	.0067	.073	12.16	108.37	.214	.147
6	.0100	.084	13.96	107.47	.245	.170
7	.0113	.094	15.26	106.62	.268	.191
8	.0131	.109	17.15	105.49	.301	.220
9	.0154	.129	19.77	104.00	.347	.257
10	.0173	.144	21.77	102.54	.382	.294
11	.0187	.156	23.27	101.13	.406	.330
12	.0203	.169	24.53	100.48	.430	.346
13	.0219	.183	26.27	99.48	.461	.371
14	.0239	.199	28.26	98.10	.492	.406
15	.0258	.215	29.56	96.63	.519	.443
16	.0277	.231	30.66	95.57	.536	.470
17	.0343	.286	35.45	91.33	.622	.577
18	.0410	.342	40.19	88.29	.705	.654
19	.0481	.401	43.97	85.17	.771	.732
20	.0542	.452	46.81	82.91	.821	.789
21	.0612	.510	49.53	81.02	.869	.837
22	.0680	.567	51.43	78.89	.902	.888
23	.0743	.619	52.89	77.92	.928	.915
24	.0812	.677	54.26	77.13	.952	.935
25	.0881	.734	54.93	76.21	.964	.959
26	.0941	.784	55.64	75.92	.976	.966
27	.1012	.844	56.07	75.44	.984	.978
28	.1079	.899	56.36	75.06	.986	.988
29	.1140	.950	56.65	74.98	.994	.990
30	.1211	1.009	56.80	74.80	.997	.994
31	.1281	1.068	56.75	74.75	.996	.995
32	.1446	1.206	56.91	74.65	.998	.998
33	.1627	1.356	57.02	74.57	1.000	1.000
34	.1799	1.499	56.93	74.57	.999	1.000
35	.1979	1.649	57.03	74.58	1.001	1.000
36	.2149	1.791	56.89	74.56	.998	1.000
37	.2332	1.944	56.94	74.56	.999	1.000
38	.2502	2.085	56.92	74.57	.999	1.000
39	.2660	2.234	56.95	74.57	.999	1.000
40	.2851	2.376	57.02	74.57	1.000	1.000
41	.3031	2.526	56.89	74.56	.998	1.000
42	.3327	2.773	56.97	74.56	.999	1.000
43	.3631	3.026	56.94	74.57	.999	1.000
44	.3931	3.276	56.95	74.57	.999	1.000
45	.4230	3.525	56.93	74.56	.999	1.000
46	.4530	3.775	56.92	74.56	.999	1.000
47	.4831	4.026	57.00	74.56	1.001	1.000
48	.5132	4.277	56.99	74.56	1.000	1.000
49	.5433	4.526	57.04	74.54	1.001	1.001
50	.5729	4.774	56.92	74.57	.999	1.000
51	.6030	5.025	56.96	74.56	.999	1.000
52	1.0831	9.026	56.91	74.57	.998	1.000
53	1.5632	13.027	57.03	74.55	1.001	1.000
54	2.0430	17.025	57.05	74.55	1.001	1.001
55	2.5227	21.023	56.76	74.55	.996	1.001
56	3.0031	25.026	56.77	74.55	.996	1.000

Table 3.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 20. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	60.562	60.562
FREE STREAM TEMPERATURE =	75.423	
WALL TEMPERATURE =	119.890	
WALL HEAT FLUX =	.04110	
FREE STREAM DENSITY =	.07505	
FREE STREAM KINEMATIC VISCOSITY =	.0001642	
DENSITY OF FLUID AT WALL =	.06929	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001890	
WALL/FREE STREAM DENSITY RATIO =	.92328	
LOCATION REYNOLDS NUMBER (REX) =	750059.43	
INPUT VALUE OF VELOCITY DELTA =	.18000	
INPUT VALUE OF TEMPERATURE DELTA =	.25000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.14500	
DISPLACEMENT THICKNESS (DELSTAR) =	.03884	.03135
MOMENTUM THICKNESS (THETA) =	.01532	.01673
ENERGY-DISSIPATION THICKNESS =	.02480	.02802
ENTHALPY THICKNESS =	.00139	.00188
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.53536	1.87432
SHAPE FACTOR 32 (ENERGY/THETA) =	1.61871	1.67519
MOMENTUM THICKNESS REYNOLDS NUMBER =	470.87	514.21
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1193.83	963.79
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.59324	-.55296
CLAUSERS 'G' INTEGRAL =	7.60750	4.26721
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03454	.02948
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01583	.01735
SHAPE FACTOR 12 - CONSTANT DENSITY =	2.18144	1.69900

LOCATION -X- 24.40000

Z = CENTERLINE

$K = 0.2 \times 10^{-6}$

Table 4.

JOb KLUM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 20. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0058	.040	6.16	116.14	.102	.084
2	.0065	.045	7.15	115.70	.118	.094
3	.0077	.053	7.73	114.83	.128	.114
4	.0085	.059	8.36	114.21	.138	.128
5	.0102	.071	10.02	112.80	.165	.160
6	.0117	.081	11.41	112.49	.188	.167
7	.0125	.086	12.31	111.96	.203	.178
8	.0147	.102	14.54	110.32	.240	.215
9	.0166	.115	17.14	109.18	.283	.241
10	.0186	.128	18.99	107.76	.314	.273
11	.0202	.140	21.02	106.39	.347	.304
12	.0216	.149	22.16	105.35	.366	.327
13	.0236	.163	24.35	103.48	.402	.369
14	.0256	.177	25.94	102.47	.428	.392
15	.0273	.188	27.96	102.04	.462	.401
16	.0292	.202	29.55	101.13	.488	.422
17	.0356	.246	34.48	95.93	.569	.539
18	.0426	.294	39.17	91.63	.647	.635
19	.0494	.341	43.32	89.26	.715	.668
20	.0554	.382	46.47	86.91	.767	.742
21	.0624	.431	49.41	83.96	.816	.808
22	.0694	.479	51.99	82.27	.859	.846
23	.0756	.523	53.85	80.92	.889	.876
24	.0827	.571	55.28	79.87	.913	.900
25	.0895	.617	56.90	78.69	.939	.928
26	.0956	.660	57.71	77.78	.953	.947
27	.1024	.706	58.41	77.18	.964	.960
28	.1096	.756	58.96	76.65	.974	.972
29	.1155	.797	59.26	76.37	.979	.979
30	.1227	.846	59.71	75.97	.986	.988
31	.1295	.893	59.95	76.01	.990	.987
32	.1464	1.010	60.39	75.72	.997	.993
33	.1642	1.133	60.46	75.56	.998	.997
34	.1816	1.253	60.55	75.53	1.000	.998
35	.1996	1.377	60.52	75.51	.999	.998
36	.2164	1.493	60.56	75.44	1.000	1.000
37	.2343	1.616	60.56	75.46	1.000	.999
38	.2514	1.734	60.61	75.44	1.001	1.000
39	.2696	1.860	60.62	75.41	1.001	1.000
40	.2865	1.976	60.61	75.42	1.001	1.000
41	.3044	2.100	60.57	75.42	1.000	1.000
42	.3342	2.305	60.54	75.41	1.000	1.000
43	.3643	2.513	60.50	75.41	.999	1.000
44	.3946	2.722	60.72	75.41	1.003	1.000
45	.4244	2.927	60.56	75.41	1.000	1.000
46	.4544	3.134	60.65	75.41	1.001	1.000
47	.4845	3.342	60.66	75.41	1.002	1.000
48	.5147	3.550	60.61	75.41	1.001	1.000
49	.5444	3.755	60.60	75.41	1.001	1.000
50	.5745	3.962	60.66	75.41	1.002	1.000
51	.6047	4.171	60.70	75.42	1.002	1.000
52	1.0547	7.481	60.60	75.41	1.001	1.000
53	1.5645	10.790	60.54	75.42	1.000	1.000
54	2.0446	14.101	60.43	75.43	.999	1.000
55	2.5241	17.406	60.45	75.43	.997	1.000
56	3.0043	20.720	60.46	75.43	.998	1.000

Table 4.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 17. GRID NO. 1

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	61.311	61.311
FREE STREAM TEMPERATURE	=	75.328	
WALL TEMPERATURE	=	120.670	
WALL HEAT FLUX	=	.04100	
FREE STREAM DENSITY	=	.07506	
FREE STREAM KINEMATIC VISCOSITY	=	.0001641	
DENSITY OF FLUID AT WALL	=	.06920	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001894	
WALL/FREE STREAM DENSITY RATIO	=	.92167	
LOCATION REYNOLDS NUMBER (REX)	=	884065.52	
INPUT VALUE OF VELOCITY DELTA	=	.17000	
INPUT VALUE OF TEMPERATURE DELTA	=	.25000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.15500	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03742	.02981
MOMENTUM THICKNESS (THETA)	=	.01561	.01641
ENERGY-DISSIPATION THICKNESS	=	.02545	.02790
ENTHALPY THICKNESS	=	.00166	.00216
SHAPE FACTOR 12 (DELSTAR/THETA)	=	2.39727	1.81662
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.63000	1.70030
MOMENTUM THICKNESS REYNOLDS NUMBER	=	485.95	510.87
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1164.95	928.06
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.57517	-.50275
CLAUSERS 'G' INTEGRAL	=	6.47145	3.50450
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.03371	.02766
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01619	.01705
SHAPE FACTOR 12 - CONSTANT DENSITY	=	2.08293	1.62216

LOCATION -X- 28.40000

Z = CENTERLINE

$K = 0.2 \times 10^{-6}$

Table 5.

JOB KLUM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 17. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0041	.027	6.87	117.05	.112	.060
2	.0056	.036	7.62	116.15	.124	.101
3	.0064	.041	8.12	115.07	.132	.124
4	.0083	.054	9.95	114.54	.162	.135
5	.0106	.069	12.82	112.71	.209	.176
6	.0123	.080	15.19	111.83	.248	.195
7	.0142	.092	17.83	110.39	.291	.227
8	.0157	.101	19.33	109.37	.315	.249
9	.0175	.113	21.75	108.91	.355	.259
10	.0194	.125	23.37	107.62	.381	.288
11	.0217	.140	25.35	106.55	.414	.311
12	.0232	.150	26.69	105.60	.435	.332
13	.0296	.191	32.22	101.56	.526	.421
14	.0365	.236	36.96	97.12	.603	.519
15	.0433	.280	41.37	93.27	.675	.604
16	.0493	.318	44.73	90.56	.730	.664
17	.0565	.365	48.42	88.10	.790	.716
18	.0634	.409	51.06	85.43	.833	.777
19	.0685	.442	52.79	83.03	.861	.830
20	.0764	.493	54.66	82.07	.892	.851
21	.0835	.539	56.12	80.50	.915	.886
22	.0896	.578	57.46	79.32	.938	.912
23	.0965	.623	58.23	78.72	.950	.934
24	.1036	.668	59.07	77.66	.964	.949
25	.1093	.705	59.47	77.22	.970	.958
26	.1163	.751	60.07	76.73	.980	.969
27	.1233	.796	60.41	76.57	.985	.973
28	.1405	.907	60.91	75.85	.993	.988
29	.1562	1.021	61.19	75.53	.998	.996
30	.1756	1.133	61.29	75.43	1.000	.998
31	.1933	1.247	61.32	75.40	1.000	.998
32	.2105	1.358	61.32	75.36	1.000	.999
33	.2284	1.474	61.44	75.39	1.002	.999
34	.2453	1.583	61.50	75.34	1.003	1.000
35	.2634	1.700	61.49	75.33	1.003	1.000
36	.2806	1.811	61.46	75.34	1.003	1.000
37	.2983	1.925	61.44	75.32	1.002	1.000
38	.3261	2.117	61.45	75.32	1.002	1.000
39	.3583	2.312	61.37	75.30	1.001	1.001
40	.3864	2.506	61.51	75.31	1.003	1.000
41	.4184	2.700	61.43	75.30	1.002	1.001
42	.4485	2.894	61.45	75.30	1.002	1.001
43	.4786	3.088	61.45	75.30	1.002	1.001
44	.5086	3.281	61.37	75.30	1.001	1.001
45	.5383	3.473	61.38	75.31	1.001	1.000
46	.5686	3.669	61.46	75.31	1.002	1.000
47	.5986	3.862	61.44	75.32	1.002	1.000
48	1.0764	6.958	61.35	75.29	1.001	1.001
49	1.5587	10.056	61.17	75.21	.998	1.003
50	2.0367	13.153	61.06	75.21	.996	1.003
51	2.5181	16.246	61.07	75.16	.996	1.004
52	2.9986	19.346	60.89	75.15	.995	1.004

Table 5.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 18. GRID NO. 1

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	61.380	61.380
FREE STREAM TEMPERATURE	=	75.441	
WALL TEMPERATURE	=	119.450	
WALL HEAT FLUX	=	.04120	
FREE STREAM DENSITY	=	.07505	
FREE STREAM KINEMATIC VISCOSITY	=	.0001642	
DENSITY OF FLUID AT WALL	=	.06935	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001887	
WALL/FREE STREAM DENSITY RATIO	=	.92401	
LOCATION REYNOLDS NUMBER (REX)	=	884753.12	
INPUT VALUE OF VELOCITY DELTA	=	.20000	
INPUT VALUE OF TEMPERATURE DELTA	=	.24000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.16500	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03930	.03310
MOMENTUM THICKNESS (THETA)	=	.01676	.01782
ENERGY-DISSIPATION THICKNESS	=	.02743	.03004
ENTHALPY THICKNESS	=	.00171	.00212
SHAPE FACTOR 12 (DELSTAR/THETA)	=	2.34493	1.85681
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.63663	1.68524
MOMENTUM THICKNESS REYNOLDS NUMBER	=	522.08	555.27
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1224.25	1031.03
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.64612	-.60175
CLAUSERS 'G' INTEGRAL	=	7.63645	4.70781
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.03543	.03098
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01735	.01850
SHAPE FACTOR 12 - CONSTANT DENSITY	=	2.04129	1.67431

LOCATION -X- 28.40000

Z = +6 INCHES

K = 0.2×10^{-6}

Table 6.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 18. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.026	6.44	116.73	.105	.062
2	.0057	.035	7.83	115.90	.126	.081
3	.0067	.041	8.35	115.49	.136	.090
4	.0077	.047	10.02	114.80	.163	.106
5	.0087	.053	10.92	113.92	.176	.126
6	.0102	.062	13.31	113.26	.217	.140
7	.0118	.072	14.94	112.62	.243	.155
8	.0126	.077	15.99	112.15	.261	.166
9	.0143	.087	18.11	110.74	.295	.198
10	.0164	.100	19.94	109.52	.325	.226
11	.0185	.112	21.91	107.90	.357	.262
12	.0202	.123	23.19	107.05	.378	.282
13	.0217	.132	24.27	106.65	.395	.291
14	.0234	.142	25.87	105.42	.421	.319
15	.0256	.155	28.00	103.80	.456	.356
16	.0277	.168	29.56	103.07	.481	.374
17	.0292	.177	30.75	102.26	.501	.391
18	.0355	.215	35.86	98.00	.584	.487
19	.0428	.260	39.80	93.40	.648	.592
20	.0494	.300	43.80	91.91	.714	.626
21	.0556	.337	46.66	89.48	.763	.681
22	.0625	.379	49.90	86.35	.813	.762
23	.0695	.421	51.74	84.52	.843	.794
24	.0756	.458	53.59	82.73	.873	.834
25	.0823	.499	54.95	81.23	.895	.868
26	.0893	.541	56.20	80.11	.916	.894
27	.0957	.580	57.46	78.85	.936	.923
28	.1024	.621	58.24	78.45	.949	.932
29	.1098	.666	59.14	77.50	.964	.953
30	.1156	.701	59.64	76.85	.972	.968
31	.1226	.743	59.96	77.05	.977	.963
32	.1293	.784	60.36	76.60	.983	.974
33	.1468	.890	60.81	76.00	.991	.987
34	.1642	.995	61.15	75.64	.996	.995
35	.1817	1.101	61.15	75.65	.996	.995
36	.1995	1.209	61.39	75.50	1.000	.999
37	.2166	1.313	61.36	75.52	1.000	.998
38	.2344	1.421	61.34	75.45	.999	1.000
39	.2515	1.524	61.43	75.48	1.001	.999
40	.2695	1.634	61.37	75.42	1.000	1.000
41	.2867	1.738	61.37	75.42	1.000	1.000
42	.3045	1.846	61.34	75.42	.999	1.000
43	.3341	2.025	61.33	75.42	.999	1.000
44	.3645	2.209	61.33	75.45	.999	1.000
45	.3944	2.390	61.41	75.42	1.000	1.000
46	.4244	2.572	61.36	75.43	1.000	1.000
47	.4546	2.755	61.35	75.44	1.000	1.000
48	.4847	2.938	61.26	75.43	.998	1.000
49	.5144	3.118	61.34	75.42	.999	1.001
50	.5448	3.302	61.35	75.43	.999	1.000
51	.5747	3.483	61.31	75.43	.999	1.000
52	.6045	3.664	61.37	75.43	1.000	1.000
53	1.0844	6.572	61.20	75.41	.997	1.001
54	1.5644	9.481	61.25	75.44	.998	1.000
55	2.0446	12.392	61.23	75.45	.998	1.000
56	2.5242	15.296	61.12	75.43	.996	1.000
57	3.0047	18.210	61.04	75.44	.994	1.000

Table 6.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 19. SPIL NO. 1

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	61.330	61.330
FREE STREAM TEMPERATURE	=	75.612	
WALL TEMPERATURE	=	121.820	
WALL HEAT FLUX	=	.04140	
FREE STREAM DENSITY	=	.07502	
FREE STREAM KINEMATIC VISCOSITY	=	.0001643	
DENSITY OF FLUID AT WALL	=	.06906	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001901	
WALL/FREE STREAM DENSITY RATIO	=	.92054	
LOCATION REYNOLDS NUMBER (REX)	=	883544.97	
INPUT VALUE OF VELOCITY DELTA	=	.18000	
INPUT VALUE OF TEMPERATURE DELTA	=	.21000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.16500	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03806	.03147
MOMENTUM THICKNESS (THETA)	=	.01653	.01730
ENERGY-DISSIPATION THICKNESS	=	.02714	.02940
ENTHALPY THICKNESS	=	.00180	.00225
SHAPE FACTOR 12 (DELSTAR/THETA)	=	2.30259	1.81861
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.64240	1.69920
MOMENTUM THICKNESS REYNOLDS NUMBER	=	514.17	538.27
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1183.92	978.91
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.56169	-.53402
CLAUSERS 'G' INTEGRAL	=	6.38567	3.75503
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.03405	.02922
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01714	.01798
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.98653	1.62549

LOCATION -X- 28.40000

Z = -6 INCHES

K = 0.2×10^{-6}

Table 7.

JOB KLDM22X TAPE 4752R- FILES 69-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 19. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0044	.027	6.64	117.82	.108	.086
2	.0067	.041	9.81	116.48	.160	.116
3	.0084	.051	12.44	115.44	.203	.138
4	.0102	.062	14.83	114.57	.242	.168
5	.0118	.072	16.51	112.72	.269	.206
6	.0135	.082	18.33	112.18	.299	.209
7	.0155	.094	19.96	110.38	.326	.248
8	.0173	.105	21.82	109.53	.356	.266
9	.0192	.117	24.07	108.91	.392	.279
10	.0256	.155	29.68	104.77	.484	.369
11	.0323	.196	34.69	100.71	.566	.457
12	.0393	.238	39.06	96.90	.637	.539
13	.0455	.276	42.21	93.50	.688	.613
14	.0525	.318	46.05	90.98	.751	.667
15	.0596	.361	48.61	87.46	.793	.744
16	.0654	.397	50.97	85.33	.831	.790
17	.0723	.438	52.98	83.83	.864	.820
18	.0794	.481	54.82	82.00	.894	.862
19	.0856	.519	56.02	80.99	.913	.884
20	.0923	.560	57.25	80.26	.933	.899
21	.0997	.604	58.14	78.84	.948	.930
22	.1057	.641	58.65	78.45	.956	.939
23	.1126	.683	59.13	77.80	.964	.953
24	.1196	.725	59.83	77.33	.976	.963
25	.1365	.827	60.49	76.49	.986	.981
26	.1542	.935	60.99	75.99	.994	.992
27	.1716	1.040	61.21	75.87	.998	.994
28	.1893	1.147	61.36	75.75	.999	.997
29	.2067	1.253	61.37	75.65	1.001	.999
30	.2245	1.361	61.35	75.63	1.000	1.000
31	.2416	1.466	61.44	75.61	1.002	1.000
32	.2595	1.573	61.47	75.59	1.002	1.000
33	.2768	1.678	61.42	75.59	1.001	1.000
34	.2945	1.785	61.36	75.56	1.001	1.001
35	.3242	1.965	61.37	75.59	1.001	1.000
36	.3546	2.149	61.44	75.59	1.002	1.001
37	.3844	2.330	61.29	75.60	.999	1.000
38	.4144	2.512	61.43	75.60	1.000	1.000
39	.4445	2.694	61.47	75.59	1.002	1.000
40	.4748	2.878	61.35	75.60	1.000	1.000
41	.5044	3.057	61.30	75.61	.999	1.000
42	.5344	3.239	61.25	75.60	.999	1.000
43	.5647	3.423	61.32	75.60	1.000	1.000
44	.5944	3.603	61.31	75.60	1.000	1.000
45	1.0748	6.514	61.38	75.62	1.001	1.000
46	1.5544	9.421	61.22	75.60	.998	1.000
47	2.0347	12.332	61.16	75.60	.997	1.000
48	2.5141	15.237	60.99	75.62	.994	1.000
49	2.9948	18.150	61.09	75.61	.996	1.000

Table 7.

JOB KLDM22X TAPE 4752K- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 16. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	62.786	62.766
FREE STREAM TEMPERATURE =	75.167	
WALL TEMPERATURE =	117.010	
WALL HEAT FLUX =	.04190	
FREE STREAM DENSITY =	.07509	
FREE STREAM KINEMATIC VISCOSITY =	.0001640	
DENSITY OF FLUID AT WALL =	.06964	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001873	
WALL/FREE STREAM DENSITY RATIO =	.92744	
LOCATION REYNOLDS NUMBER (REX) =	1033427.74	
INPUT VALUE OF VELOCITY DELTA =	.22000	
INPUT VALUE OF TEMPERATURE DELTA =	.31000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.19800	
DISPLACEMENT THICKNESS (DELSTAR) =	.04015	.03355
MOMENTUM THICKNESS (THETA) =	.01730	.01850
ENERGY-DISSIPATION THICKNESS =	.02855	.03134
ENTHALPY THICKNESS =	.00170	.00212
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.32069	1.81344
SHAPE FACTOR 32 (ENERGY/THETA) =	1.65002	1.69407
MOMENTUM THICKNESS REYNOLDS NUMBER =	551.90	590.09
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1280.78	1070.10
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.02445	-.59611
CLAUSERS 'G' INTEGRAL =	7.40348	4.41754
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03571	.03145
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01787	.01915
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.99842	1.64191

LOCATION -X- 32.40000

Z = CENTERLINE

K = 0.2 x 10^{-6}

Table 8.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 16. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0055	.026	5.77	113.71	.092	.088
2	.0067	.034	7.66	113.33	.122	.088
3	.0076	.039	9.19	112.34	.146	.112
4	.0091	.046	10.96	111.57	.175	.130
5	.0106	.054	13.15	111.03	.209	.143
6	.0114	.058	14.17	110.66	.226	.151
7	.0133	.067	17.86	109.47	.284	.180
8	.0153	.077	19.02	106.67	.303	.247
9	.0173	.088	21.07	106.16	.336	.259
10	.0191	.097	22.98	106.17	.366	.259
11	.0206	.105	24.74	105.46	.394	.276
12	.0226	.114	26.54	103.56	.423	.321
13	.0245	.124	28.32	101.65	.451	.367
14	.0266	.134	29.64	102.62	.472	.344
15	.0281	.142	31.40	100.42	.500	.349
16	.0346	.175	36.00	98.05	.573	.453
17	.0416	.210	40.23	93.58	.641	.560
18	.0484	.245	43.92	90.73	.700	.628
19	.0545	.275	47.09	88.00	.750	.693
20	.0614	.310	49.64	85.64	.791	.750
21	.0685	.346	52.44	84.74	.835	.788
22	.0745	.376	54.06	82.50	.861	.825
23	.0815	.412	55.59	80.89	.885	.863
24	.0886	.447	57.37	80.18	.914	.880
25	.0945	.477	58.43	79.39	.931	.899
26	.1016	.513	59.16	78.75	.942	.914
27	.1066	.538	59.66	77.84	.954	.936
28	.1148	.580	60.63	77.32	.966	.949
29	.1217	.615	60.91	77.16	.970	.952
30	.1264	.639	61.17	76.32	.975	.972
31	.1454	.734	61.99	75.88	.987	.983
32	.1632	.824	62.32	75.71	.993	.987
33	.1806	.912	62.48	75.42	.994	.994
34	.1965	1.003	62.54	75.35	.996	.996
35	.2155	1.089	62.66	75.38	.998	.995
36	.2334	1.179	62.71	75.26	.999	.998
37	.2504	1.265	62.68	75.31	1.001	.997
38	.2684	1.356	62.77	75.19	1.000	.999
39	.2855	1.442	62.74	75.21	1.000	.999
40	.3034	1.532	62.79	75.16	1.000	1.000
41	.3332	1.683	62.84	75.17	1.001	1.000
42	.3634	1.836	62.78	75.16	1.000	1.000
43	.3935	1.988	62.75	75.17	.999	1.000
44	.4235	2.141	62.84	75.17	1.001	1.000
45	.4534	2.290	62.81	75.16	1.000	1.000
46	.4834	2.442	62.80	75.16	1.001	1.000
47	.5137	2.595	62.76	75.14	1.000	1.001
48	.5438	2.747	62.80	75.16	1.000	1.000
49	.5734	2.896	62.76	75.16	1.000	1.000
50	.6037	3.049	62.84	75.16	1.001	1.000
51	1.0835	5.472	62.81	75.16	1.000	1.000
52	1.5635	7.897	62.57	75.14	.996	1.001
53	2.0434	10.320	62.56	75.12	.996	1.001
54	2.5232	12.744	62.54	75.14	.996	1.001
55	3.0034	15.169	62.53	75.10	.996	1.002

Table 8.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 13. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	64.370	64.370
FREE STREAM TEMPERATURE =	75.420	
WALL TEMPERATURE =	115.930	
WALL HEAT FLUX =	.04250	
FREE STREAM DENSITY =	.07508	
FREE STREAM KINEMATIC VISCOSITY =	.0001641	
DENSITY OF FLUID AT WALL =	.06979	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001867	
WALL/FREE STREAM DENSITY RATIO =	.92962	
LOCATION REYNOLDS NUMBER (REX) =	1189710.35	
INPUT VALUE OF VELOCITY DELTA =	.24000	
INPUT VALUE OF TEMPERATURE DELTA =	.34000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.20000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04054	.03518
MOMENTUM THICKNESS (THETA) =	.01902	.01988
ENERGY-DISSIPATION THICKNESS =	.03179	.03395
ENTHALPY THICKNESS =	.00194	.00226
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.13172	1.76963
SHAPE FACTOR 32 (ENERGY/THETA) =	1.67131	1.70780
MOMENTUM THICKNESS REYNOLDS NUMBER =	621.64	649.81
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1325.16	1149.93
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.63628	-.64118
CLAUSERS 'G' INTEGRAL =	7.20622	4.70805
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03567	.03296
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01960	.02052
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.82021	1.60621

LOCATION -X- 36.40000

Z = CENTERLINE

K = 0.2 X 10^{-6}

Table 9.

JOB KLDM22X TAPE 4752R- FILES 69-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 13. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0059	.030	9.86	110.53	.153	.133
2	.0064	.032	10.63	110.56	.165	.132
3	.0074	.037	11.92	109.19	.185	.166
4	.0083	.042	12.81	107.67	.199	.204
5	.0102	.051	16.31	109.45	.253	.160
6	.0118	.059	18.92	108.17	.294	.192
7	.0123	.062	19.34	107.65	.300	.207
8	.0148	.074	22.16	106.28	.345	.263
9	.0168	.084	24.43	105.24	.380	.264
10	.0187	.094	26.73	104.14	.400	.291
11	.0202	.101	27.35	102.28	.425	.337
12	.0218	.109	28.47	101.56	.442	.354
13	.0236	.119	30.12	101.32	.468	.361
14	.0253	.127	31.90	101.16	.496	.365
15	.0278	.139	33.23	100.15	.516	.390
16	.0292	.146	34.02	99.12	.532	.415
17	.0357	.179	38.36	95.28	.596	.510
18	.0424	.212	42.17	93.23	.655	.560
19	.0495	.246	46.16	90.61	.717	.627
20	.0554	.277	48.62	88.84	.755	.669
21	.0624	.312	51.73	86.87	.797	.717
22	.0693	.347	53.44	84.39	.830	.779
23	.0754	.377	54.95	83.11	.854	.810
24	.0824	.412	56.50	82.07	.876	.836
25	.0894	.447	58.06	81.02	.902	.862
26	.0954	.477	58.77	80.43	.913	.876
27	.1029	.515	59.79	80.04	.929	.886
28	.1094	.547	60.48	79.40	.940	.902
29	.1157	.579	61.09	78.40	.949	.926
30	.1225	.613	61.63	77.71	.957	.943
31	.1295	.648	62.04	77.61	.964	.946
32	.1468	.734	62.90	77.04	.977	.960
33	.1641	.821	63.23	76.46	.982	.974
34	.1818	.909	63.78	76.22	.991	.980
35	.1994	.997	64.02	76.07	.995	.984
36	.2167	1.084	64.15	75.93	.997	.987
37	.2344	1.172	64.29	75.77	.999	.991
38	.2513	1.257	64.35	75.72	1.000	.993
39	.2693	1.347	64.33	75.56	.999	.997
40	.2864	1.432	64.43	75.56	1.001	.997
41	.3043	1.522	64.41	75.52	1.001	.998
42	.3342	1.671	64.38	75.44	1.000	1.000
43	.3643	1.822	64.41	75.42	1.001	1.000
44	.3944	1.972	64.46	75.41	1.001	1.000
45	.4243	2.122	64.54	75.43	1.003	1.000
46	.4544	2.272	64.47	75.42	1.002	1.000
47	.4844	2.422	64.55	75.44	1.003	1.000
48	.5144	2.572	64.45	75.44	1.001	.999
49	.5449	2.725	64.45	75.45	1.001	.999
50	.5744	2.872	64.47	75.44	1.002	1.000
51	.6043	3.022	64.33	75.44	.999	.999
52	1.0844	5.422	64.40	75.45	1.001	.999
53	1.5643	7.822	64.16	75.42	.997	1.000
54	2.0445	10.223	64.18	75.43	.997	1.000
55	2.5242	12.621	64.23	75.42	.998	1.000
56	3.0044	15.022	64.19	75.41	.997	1.000

Table 9.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 15. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	64.136	64.136
FREE STREAM TEMPERATURE =	75.436	
WALL TEMPERATURE =	114.610	
WALL HEAT FLUX =	.04210	
FREE STREAM DENSITY =	.07505	
FREE STREAM KINEMATIC VISCOSITY =	.0001642	
DENSITY OF FLUID AT WALL =	.06993	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001860	
WALL/FREE STREAM DENSITY RATIO =	.93179	
LOCATION REYNOLDS NUMBER (REX) =	1184919.39	
INPUT VALUE OF VELOCITY DELTA =	.25000	
INPUT VALUE OF TEMPERATURE DELTA =	.34000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.21000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04275	.03692
MOMENTUM THICKNESS (THETA) =	.01941	.02062
ENERGY-DISSIPATION THICKNESS =	.03234	.03504
ENTHALPY THICKNESS =	.00192	.00226
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.20323	1.79059
SHAPE FACTOR 32 (ENERGY/THETA) =	1.66677	1.69944
MOMENTUM THICKNESS REYNOLDS NUMBER =	631.69	671.22
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1391.75	1201.88
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.71137	-.69448
CLAUSERS 'G' INTEGRAL =	8.36859	5.37500
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03819	.03469
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01998	.02128
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.91131	1.63015

LOCATION -X- 36.40000

Z = -6 INCHES

K = 0.2 X 10^{-6}

Table 10.

JOB KLOM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 15. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.025	6.56	108.33	.103	.160
2	.0068	.033	7.78	110.41	.121	.107
3	.0075	.036	9.04	109.82	.141	.122
4	.0063	.040	9.81	108.94	.153	.145
5	.0097	.046	12.80	108.39	.200	.159
6	.0112	.053	14.78	107.42	.231	.184
7	.0125	.060	16.87	106.55	.263	.206
8	.0134	.064	17.75	106.33	.277	.211
9	.0155	.074	20.46	105.63	.319	.224
10	.0174	.083	22.72	104.16	.354	.267
11	.0194	.093	24.68	103.04	.385	.295
12	.0211	.101	26.95	102.40	.414	.312
13	.0226	.108	27.87	101.89	.435	.325
14	.0249	.119	29.16	101.26	.455	.341
15	.0266	.127	30.70	100.83	.480	.352
16	.0286	.136	32.59	100.25	.508	.366
17	.0302	.144	37.26	99.43	.519	.368
18	.0364	.173	37.09	95.31	.578	.493
19	.0438	.209	41.80	93.10	.652	.549
20	.0505	.241	45.45	91.90	.706	.580
21	.0564	.269	47.92	88.59	.747	.664
22	.0635	.303	50.25	86.59	.783	.715
23	.0706	.336	52.67	84.41	.821	.771
24	.0765	.364	54.26	83.93	.846	.783
25	.0834	.397	55.91	83.26	.872	.800
26	.0905	.431	57.12	81.51	.891	.845
27	.0964	.459	58.32	80.59	.909	.868
28	.1034	.493	59.08	79.91	.921	.886
29	.1106	.527	59.80	78.96	.934	.910
30	.1165	.555	60.50	78.29	.943	.927
31	.1236	.589	61.40	78.25	.957	.928
32	.1305	.622	61.57	77.92	.960	.937
33	.1473	.702	62.53	76.99	.975	.960
34	.1652	.787	63.23	76.48	.986	.973
35	.1825	.869	63.49	76.17	.990	.981
36	.2005	.955	63.78	76.00	.994	.986
37	.2174	1.035	63.87	75.82	.996	.990
38	.2354	1.121	64.01	75.80	.998	.991
39	.2525	1.203	64.12	75.77	1.000	.991
40	.2704	1.288	64.12	75.63	1.000	.995
41	.2875	1.369	64.17	75.54	1.001	.997
42	.3053	1.454	64.11	75.43	1.000	1.000
43	.3352	1.596	64.26	75.44	1.002	1.000
44	.3655	1.741	64.17	75.46	1.001	.999
45	.3954	1.883	64.31	75.41	1.003	1.001
46	.4254	2.026	64.22	75.42	1.001	1.000
47	.4556	2.170	64.35	75.41	1.002	1.001
48	.4855	2.312	64.33	75.41	1.003	1.001
49	.5154	2.454	64.25	75.42	1.002	1.000
50	.5454	2.597	64.25	75.41	1.002	1.001
51	.5753	2.740	64.27	75.40	1.002	1.001
52	.6055	2.883	64.22	75.42	1.001	1.000
53	1.0855	5.169	64.17	75.42	1.000	1.000
54	1.5655	7.455	64.11	75.41	1.000	1.001
55	2.0455	9.741	63.92	75.43	.997	1.000
56	2.5251	12.024	63.64	75.44	.995	1.000
57	3.0055	14.312	63.75	75.44	.994	1.000

Table 10.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 12. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	66.738	66.738
FREE STREAM TEMPERATURE =	75.443	
WALL TEMPERATURE =	109.770	
WALL HEAT FLUX =	.04350	
FREE STREAM DENSITY =	.07507	
FREE STREAM KINEMATIC VISCOSITY =	.0001641	
DENSITY OF FLUID AT WALL =	.07055	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001832	
WALL/FREE STREAM DENSITY RATIO =	.93972	
LOCATION REYNOLDS NUMBER (REX) =	1368909.76	
INPUT VALUE OF VELOCITY DELTA =	.31000	
INPUT VALUE OF TEMPERATURE DELTA =	.46000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03961	.03625
MOMENTUM THICKNESS (THETA) =	.02145	.02179
ENERGY-DISSIPATION THICKNESS =	.03688	.03798
ENTHALPY THICKNESS =	.00217	.00233
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.84626	1.66342
SHAPE FACTOR 32 (ENERGY/THETA) =	1.71930	1.74280
MOMENTUM THICKNESS REYNOLDS NUMBER =	726.90	738.42
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1342.05	1228.31
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.63723	-.67312
CLAUSERS 'G' INTEGRAL =	6.06489	4.55936
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03461	.03396
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02199	.02235
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.58292	1.51902

LOCATION -X- 40.40000

Z = CENTERLINE

K = 0.2 x 10^{-6}

Table 11.

JOB KLDV22x TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 12. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.020	15.75	104.87	.236	.143
2	.0065	.024	16.70	103.56	.250	.181
3	.0074	.028	18.21	102.69	.273	.206
4	.0083	.031	20.30	103.63	.304	.179
5	.0098	.036	23.02	102.18	.345	.221
6	.0111	.041	24.86	100.94	.372	.257
7	.0126	.047	26.74	99.70	.401	.293
8	.0133	.049	27.78	98.70	.416	.322
9	.0155	.057	30.51	99.47	.457	.300
10	.0176	.065	31.84	98.39	.477	.332
11	.0197	.073	33.84	98.28	.507	.335
12	.0212	.079	34.69	97.85	.520	.346
13	.0227	.084	35.30	97.08	.529	.370
14	.0247	.092	37.22	96.26	.558	.393
15	.0265	.098	38.26	95.62	.574	.412
16	.0287	.106	39.54	94.88	.592	.434
17	.0302	.112	40.23	94.44	.600	.447
18	.0365	.135	43.97	93.54	.659	.473
19	.0436	.162	47.04	91.25	.705	.540
20	.0508	.187	49.82	88.55	.748	.618
21	.0566	.210	51.82	87.58	.777	.646
22	.0635	.235	53.96	86.44	.808	.680
23	.0705	.261	55.75	85.16	.835	.717
24	.0766	.284	57.12	83.63	.856	.762
25	.0833	.308	58.26	82.81	.873	.785
26	.0903	.334	59.27	81.62	.888	.820
27	.0967	.358	60.26	81.16	.903	.833
28	.1037	.384	60.77	80.71	.911	.846
29	.1104	.409	61.84	79.20	.927	.891
30	.1165	.431	62.31	78.68	.934	.906
31	.1236	.458	62.81	78.98	.941	.897
32	.1306	.484	63.37	78.81	.949	.902
33	.1476	.547	64.26	77.72	.963	.945
34	.1652	.612	64.96	77.11	.972	.951
35	.1825	.676	65.42	76.92	.980	.957
36	.2006	.743	65.55	76.65	.982	.965
37	.2174	.805	65.86	76.42	.987	.971
38	.2357	.873	66.23	75.95	.992	.985
39	.2526	.935	66.38	76.06	.994	.982
40	.2707	1.002	66.44	75.86	.995	.988
41	.2876	1.065	66.36	75.85	.994	.988
42	.3056	1.131	66.59	75.64	.998	.994
43	.3351	1.241	66.64	75.71	.999	.992
44	.3656	1.353	66.70	75.58	.999	.996
45	.3955	1.464	66.82	75.53	1.001	.997
46	.4254	1.575	66.77	75.47	1.000	.999
47	.4553	1.685	66.81	75.42	1.001	1.001
48	.4856	1.798	66.79	75.46	1.001	1.000
49	.5153	1.908	66.74	75.44	1.000	1.000
50	.5457	2.020	66.82	75.43	1.001	1.000
51	.5755	2.130	66.67	75.44	.999	1.000
52	.6053	2.241	66.74	75.44	1.000	1.000
53	1.0856	4.019	66.59	75.43	.998	1.000
54	1.5655	5.795	66.59	75.42	.998	1.001
55	2.0456	7.572	66.52	75.42	.996	1.001
56	2.5251	9.347	66.43	75.41	.995	1.001
57	3.0055	11.125	66.45	75.42	.996	1.001

Table 11.

JOB KLOM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 9. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	68.556	68.556
FREE STREAM TEMPERATURE =	76.036	
WALL TEMPERATURE =	102.650	
WALL HEAT FLUX =	.04520	
FREE STREAM DENSITY =	.07499	
FREE STREAM KINEMATIC VISCOSITY =	.0001645	
DENSITY OF FLUID AT WALL =	.07144	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001792	
WALL/FREE STREAM DENSITY RATIO =	.95267	
LOCATION REYNOLDS NUMBER (REX) =	1542400.92	
INPUT VALUE OF VELOCITY DELTA =	.37000	
INPUT VALUE OF TEMPERATURE DELTA =	.46000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03912	.03739
MOMENTUM THICKNESS (THETA) =	.02349	.02359
ENERGY-DISSIPATION THICKNESS =	.04137	.04176
ENTHALPY THICKNESS =	.00243	.00250
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.66510	1.58512
SHAPE FACTOR 32 (ENERGY/THETA) =	1.76093	1.77057
MOMENTUM THICKNESS REYNOLDS NUMBER =	816.10	819.40
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1358.88	1298.64
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.01967
CLAUSERS 'DELTA' INTEGRAL =	-.62492	-.69532
CLAUSERS 'G' INTEGRAL =	5.04362	4.29098
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03404	.03491
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02399	.02409
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.41883	1.44891

LOCATION -X- 44.40000

Z = CENTERLINE

$K = 0.2 \times 10^{-6}$

Table 12.

JOB KLDM22X TAP 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 9. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.016	22.16	98.73	.323	.147
2	.0068	.023	24.86	97.54	.363	.192
3	.0075	.026	27.26	97.12	.396	.208
4	.0083	.028	29.00	97.58	.423	.191
5	.0096	.033	30.76	97.06	.449	.210
6	.0112	.038	32.63	96.29	.476	.239
7	.0127	.043	34.52	95.80	.504	.258
8	.0137	.047	35.15	95.29	.513	.277
9	.0157	.053	37.06	94.60	.541	.303
10	.0174	.059	37.84	95.56	.552	.266
11	.0195	.066	39.73	94.63	.579	.301
12	.0212	.072	40.77	94.12	.595	.320
13	.0226	.077	41.42	94.24	.604	.316
14	.0245	.083	42.16	94.21	.615	.317
15	.0263	.089	43.62	93.95	.636	.326
16	.0285	.097	44.64	93.62	.651	.339
17	.0301	.102	45.36	93.30	.662	.351
18	.0367	.125	47.76	91.40	.697	.423
19	.0434	.147	50.25	90.65	.733	.451
20	.0504	.171	52.51	88.62	.766	.527
21	.0566	.192	54.16	87.65	.790	.564
22	.0636	.216	55.76	86.86	.813	.593
23	.0704	.239	57.36	85.32	.837	.651
24	.0767	.261	57.91	84.53	.845	.681
25	.0834	.283	59.56	84.01	.868	.700
26	.0907	.308	60.10	83.56	.877	.717
27	.0966	.328	61.01	82.49	.890	.757
28	.1036	.352	61.33	81.41	.895	.798
29	.1103	.375	62.10	81.53	.906	.793
30	.1167	.396	62.76	81.12	.916	.809
31	.1234	.419	63.49	80.82	.926	.820
32	.1304	.443	64.08	80.53	.935	.831
33	.1473	.500	64.77	79.60	.945	.866
34	.1652	.561	65.82	78.72	.960	.899
35	.1823	.619	66.16	77.80	.965	.934
36	.2007	.682	66.75	77.78	.974	.935
37	.2174	.738	67.07	77.54	.978	.944
38	.2353	.799	67.53	77.27	.985	.954
39	.2523	.857	67.72	77.04	.988	.962
40	.2705	.919	68.03	76.77	.992	.972
41	.2877	.977	68.20	76.56	.995	.980
42	.3058	1.039	68.31	76.55	.996	.981
43	.3352	1.138	68.39	76.29	.998	.990
44	.3655	1.241	68.59	76.25	1.000	.992
45	.3953	1.342	68.53	76.21	1.000	.993
46	.4256	1.445	68.59	76.09	1.000	.996
47	.4556	1.547	68.59	76.04	1.000	1.000
48	.4853	1.648	68.56	76.03	1.000	1.000
49	.5156	1.751	68.63	76.03	1.001	1.000
50	.5456	1.853	68.66	76.04	1.001	1.000
51	.5754	1.954	68.61	76.04	1.001	1.000
52	.6056	2.057	68.58	76.02	1.000	1.000
53	1.0856	3.687	68.59	76.04	1.000	1.000
54	1.5656	5.317	68.55	76.03	1.000	1.000
55	2.0454	6.946	68.34	76.04	.997	1.000
56	2.5251	8.575	68.35	76.04	.997	1.000
57	3.0055	10.206	68.41	76.05	.998	.999

Table 12.

JOB KLDM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 10. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	68.661	68.661
FREE STREAM TEMPERATURE =	75.804	
WALL TEMPERATURE =	105.290	
WALL HEAT FLUX =	.04560	
FREE STREAM DENSITY =	.07502	
FREE STREAM KINEMATIC VISCOSITY =	.0001643	
DENSITY OF FLUID AT WALL =	.07111	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001806	
WALL/FREE STREAM DENSITY RATIO =	.94761	
LOCATION REYNOLDS NUMBER (REX) =	1545943.12	
INPUT VALUE OF VELOCITY DELTA =	.37000	
INPUT VALUE OF TEMPERATURE DELTA =	.49000	
CALCULATED DELTA =		.30429
DELTA 99.5% INPUT =	.31000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04217	.04016
MOMENTUM THICKNESS (THETA) =	.02504	.02511
ENERGY-DISSIPATION THICKNESS =	.04387	.04433
ENTHALPY THICKNESS =	.00262	.00271
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.68395	1.59927
SHAPE FACTOR 32 (ENERGY/THETA) =	1.75159	1.76557
MOMENTUM THICKNESS REYNOLDS NUMBER =	872.02	874.27
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1468.45	1398.20
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.03857
CLAUSERS 'DELTA' INTEGRAL =	-.71304	-.75803
CLAUSERS 'G' INTEGRAL =	5.71210	4.82149
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03741	.03747
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02562	.02569
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.46038	1.45866

LOCATION -X- 44.40000

Z = +6 INCHES

K = 0.2 X 10^{-6}

Table 13.

JOB KLDM22x TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 10. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.014	18.79	102.25	.274	.103
2	.0067	.016	20.5[illegible]	101.75	.300	.121
3	.0065	.021	22.86	100.65	.333	.151
4	.0073	.024	24.87	100.23	.362	.171
5	.0086	.026	26.76	99.05	.390	.212
6	.0102	.033	29.31	99.73	.427	.189
7	.0116	.036	30.[illegible]4	99.26	.445	.205
8	.0125	.040	32.17	98.81	.469	.220
9	.0145	.047	34.25	98.52	.499	.230
10	.0167	.054	36.18	97.93	.527	.250
11	.0187	.060	37.36	96.29	.544	.305
12	.0202	.065	37.86	95.76	.551	.323
13	.0217	.070	38.78	95.86	.565	.319
14	.0238	.077	40.29	95.50	.587	.332
15	.0255	.082	40.79	94.58	.594	.363
16	.0276	.089	42.07	95.55	.613	.330
17	.0291	.094	42.73	95.57	.622	.330
18	.0354	.114	45.68	93.49	.665	.400
19	.0426	.137	48.50	91.88	.706	.455
20	.0494	.159	50.82	90.43	.740	.504
21	.0557	.180	52.85	88.54	.770	.568
22	.0623	.201	54.52	87.53	.794	.602
23	.0695	.224	55.80	85.85	.813	.659
24	.0754	.243	57.23	85.20	.834	.681
25	.0824	.266	58.32	84.62	.849	.701
26	.0893	.288	59.32	84.08	.864	.719
27	.0958	.309	60.44	83.08	.880	.753
28	.1023	.330	61.29	82.49	.893	.773
29	.1096	.354	61.70	82.09	.899	.787
30	.1157	.373	62.74	82.14	.914	.785
31	.1226	.396	63.00	81.20	.917	.817
32	.1294	.418	63.67	80.62	.927	.837
33	.1466	.473	64.59	78.78	.941	.899
34	.1642	.530	65.28	78.32	.951	.915
35	.1819	.587	66.13	78.79	.963	.899
36	.1994	.643	66.59	77.70	.970	.936
37	.2168	.699	66.98	76.98	.974	.960
38	.2345	.757	67.34	77.28	.981	.950
39	.2513	.811	67.52	77.01	.983	.959
40	.2693	.869	67.77	76.56	.987	.974
41	.2863	.924	68.16	76.37	.993	.981
42	.3043	.982	68.24	76.43	.994	.979
43	.3342	1.076	68.39	76.15	.996	.988
44	.3648	1.177	68.51	76.14	.998	.989
45	.3944	1.272	68.69	75.95	1.000	.995
46	.4244	1.369	68.61	75.87	.999	.998
47	.4546	1.467	68.66	75.84	1.000	.999
48	.4844	1.563	68.65	75.81	1.000	1.000
49	.5145	1.660	68.74	75.81	1.001	1.000
50	.5449	1.758	68.63	75.80	1.000	1.000
51	.5745	1.853	68.61	75.80	.999	1.000
52	.6043	1.949	68.61	75.78	.999	1.001
53	1.0844	3.496	68.62	75.80	.999	1.000
54	1.5644	5.047	68.50	75.80	.998	1.000
55	2.0443	6.595	68.49	75.79	.997	1.001
56	2.5242	8.143	68.35	75.78	.996	1.001
57	3.0042	9.691	68.34	75.75	.995	1.002

Table 13.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 11. GRID NO. 1

BOUNDARY LAYER PROPERTIES	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	68.634	68.634
FREE STREAM TEMPERATURE =	75.597	
WALL TEMPERATURE =	107.740	
WALL HEAT FLUX =	.04500	
FREE STREAM DENSITY =	.07505	
FREE STREAM KINEMATIC VISCOSITY =	.0001642	
DENSITY OF FLUID AT WALL =	.07080	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001820	
WALL/FREE STREAM DENSITY RATIO =	.94335	
LOCATION REYNOLDS NUMBER (REX) =	1546400.16	
INPUT VALUE OF VELOCITY DELTA =	.37000	
INPUT VALUE OF TEMPERATURE DELTA =	.49000	
CALCULATED DELTA =		.29399
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04048	.03843
MOMENTUM THICKNESS (THETA) =	.02340	.02345
ENERGY-DISSIPATION THICKNESS =	.04075	.04117
ENTHALPY THICKNESS =	.00265	.00274
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.72976	1.63904
SHAPE FACTOR 32 (ENERGY/THETA) =	1.74147	1.75572
MOMENTUM THICKNESS REYNOLDS NUMBER =	815.05	816.65
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1409.83	1338.52
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.01617
CLAUSERS 'DELTA' INTEGRAL =	-.65165	-.71550
CLAUSERS 'G' INTEGRAL =	5.55708	4.67564
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03518	.03571
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02401	.02406
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.46539	1.48393

LOCATION -X- 44.40000

Z = -6 INCHES

K = 0.2 X 10^{-6}

Table 14.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 11. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.018	24.34	104.59	.356	.098
2	.0096	.023	25.03	103.15	.365	.143
3	.0077	.026	27.15	101.45	.396	.196
4	.0085	.029	27.93	101.21	.407	.203
5	.0096	.033	28.90	101.91	.421	.181
6	.0112	.038	30.28	101.71	.441	.188
7	.0126	.043	31.89	100.88	.465	.214
8	.0137	.045	32.32	100.78	.471	.217
9	.0156	.053	33.14	99.00	.483	.272
10	.0175	.060	35.69	99.22	.520	.265
11	.0196	.067	36.36	98.42	.530	.290
12	.0211	.072	37.64	98.38	.548	.291
13	.0228	.078	37.95	98.02	.553	.302
14	.0245	.083	39.42	97.67	.574	.313
15	.0263	.090	40.78	97.25	.594	.326
16	.0286	.097	41.75	96.60	.608	.346
17	.0301	.102	42.91	96.16	.625	.360
18	.0367	.125	45.31	94.90	.660	.399
19	.0433	.147	48.49	92.43	.707	.476
20	.0506	.173	51.31	91.68	.748	.500
21	.0565	.192	53.26	89.53	.776	.567
22	.0636	.216	55.00	88.00	.801	.614
23	.0707	.241	56.69	86.23	.830	.669
24	.0766	.261	57.86	85.38	.843	.696
25	.0835	.284	59.30	84.82	.864	.713
26	.0906	.308	60.36	82.96	.880	.771
27	.0965	.328	61.57	82.83	.890	.775
28	.1035	.352	62.01	82.49	.903	.785
29	.1104	.376	62.53	81.60	.911	.813
30	.1166	.397	62.98	81.23	.918	.825
31	.1235	.420	63.63	80.39	.930	.861
32	.1305	.444	64.46	79.59	.939	.876
33	.1475	.502	65.36	78.68	.952	.904
34	.1652	.562	65.87	78.14	.960	.921
35	.1830	.623	66.57	77.86	.970	.929
36	.2005	.682	67.04	77.13	.977	.952
37	.2178	.741	67.45	76.71	.983	.965
38	.2355	.801	67.64	76.46	.986	.973
39	.2526	.859	68.04	76.63	.991	.968
40	.2704	.920	68.03	76.33	.991	.977
41	.2873	.977	68.34	76.06	.996	.986
42	.3058	1.040	68.46	76.02	.997	.987
43	.3351	1.140	68.43	75.79	.997	.994
44	.3658	1.244	68.59	75.80	.999	.994
45	.3953	1.345	68.56	75.67	.999	.996
46	.4256	1.448	68.63	75.71	1.000	.996
47	.4557	1.550	68.71	75.64	1.001	.999
48	.4854	1.651	68.66	75.60	1.000	1.000
49	.5156	1.754	68.61	75.60	1.000	1.000
50	.5456	1.856	68.64	75.59	1.000	1.000
51	.5753	1.957	68.63	75.60	1.000	1.000
52	.6053	2.059	68.71	75.59	1.001	1.000
53	1.0856	3.693	68.59	75.60	.999	1.000
54	1.5658	5.326	68.59	75.60	.999	1.000
55	2.0453	6.957	68.46	75.60	.998	1.000
56	2.5252	8.589	68.42	75.62	.997	.999
57	3.0057	10.224	68.37	75.61	.996	1.000

Table 14.

JOb KLDM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 8. GRID NO. 1

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	70.574	70.574
FREE STREAM TEMPERATURE	=	76.053	
WALL TEMPERATURE	=	100.250	
WALL HEAT FLUX	=	.04570	
FREE STREAM DENSITY	=	.07499	
FREE STREAM KINEMATIC VISCOSITY	=	.0001645	
DENSITY OF FLUID AT WALL	=	.07175	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001778	
WALL/FREE STREAM DENSITY RATIO	=	.95679	
LOCATION REYNOLDS NUMBER (REX)	=	1730743.22	
INPUT VALUE OF VELOCITY DELTA	=	.41000	
INPUT VALUE OF TEMPERATURE DELTA	=	.51000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.35400	
DISPLACEMENT THICKNESS (DELSTAR)	=	.04307	.04240
MOMENTUM THICKNESS (THETA)	=	.02778	.02782
ENERGY-DISSIPATION THICKNESS	=	.04956	.04968
ENTHALPY THICKNESS	=	.00263	.00266
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.55031	1.52418
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.78383	1.78593
MOMENTUM THICKNESS REYNOLDS NUMBER	=	993.42	994.72
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1540.11	1516.13
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.73583	-.80993
CLAUSERS 'G' INTEGRAL	=	5.05641	4.75216
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.03828	.03976
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.02827	.02831
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.35441	1.40450

LOCATION -X- 48.40000

Z = CENTERLINE

$K = 0.2 \times 10^{-6}$

Table 15.

JOB KLDM22x TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 8. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.012	23.04	95.08	.326	.214
2	.0053	.015	25.21	94.33	.357	.245
3	.0066	.019	28.51	94.00	.408	.258
4	.0076	.022	31.60	93.61	.448	.274
5	.0086	.024	33.26	92.93	.472	.303
6	.0102	.029	35.97	92.99	.510	.300
7	.0114	.032	37.20	93.35	.527	.285
8	.0125	.035	37.93	93.14	.537	.294
9	.0146	.041	40.02	91.83	.567	.348
10	.0165	.047	41.77	91.67	.592	.354
11	.0186	.053	42.86	91.80	.608	.349
12	.0202	.057	43.71	91.17	.619	.375
13	.0217	.061	44.55	90.53	.631	.402
14	.0235	.066	45.20	90.97	.641	.384
15	.0255	.072	46.11	91.83	.653	.348
16	.0276	.078	47.20	91.47	.669	.363
17	.0292	.083	47.44	90.71	.672	.394
18	.0355	.100	49.73	88.88	.705	.470
19	.0429	.121	51.91	87.90	.736	.510
20	.0495	.140	53.32	87.33	.756	.534
21	.0554	.157	55.07	86.99	.780	.548
22	.0624	.176	56.22	86.01	.797	.589
23	.0696	.197	57.63	85.53	.817	.608
24	.0755	.213	58.10	84.96	.823	.632
25	.0827	.234	59.15	84.08	.838	.668
26	.0895	.253	59.84	83.51	.848	.692
27	.0956	.270	60.67	83.09	.860	.709
28	.1025	.290	61.43	82.81	.870	.721
29	.1096	.310	62.26	81.97	.882	.756
30	.1155	.326	62.82	81.62	.890	.770
31	.1225	.346	62.65	81.69	.891	.767
32	.1295	.366	63.76	81.68	.903	.767
33	.1464	.414	64.94	81.15	.920	.789
34	.1642	.464	66.03	80.46	.936	.818
35	.1813	.512	66.61	79.45	.944	.859
36	.1995	.564	67.33	78.82	.954	.886
37	.2164	.611	68.07	78.27	.965	.908
38	.2344	.662	68.52	78.03	.971	.918
39	.2514	.710	69.00	77.50	.976	.940
40	.2694	.761	69.36	77.08	.983	.933
41	.2864	.809	69.63	77.03	.987	.959
42	.3043	.860	69.91	76.72	.991	.972
43	.3541	1.000	70.19	76.41	.995	.985
44	.4047	1.143	70.43	76.20	.998	.994
45	.4544	1.284	70.54	76.13	1.000	.997
46	.5045	1.425	70.61	76.05	1.000	1.000
47	.5545	1.566	70.57	76.05	1.000	1.000
48	.6045	1.708	70.64	76.05	1.001	1.000
49	.6544	1.849	70.54	76.06	.999	1.000
50	.7044	1.990	70.54	76.06	1.000	1.000
51	.7544	2.131	70.53	76.07	.999	.999
52	.8046	2.273	70.60	76.06	1.000	1.000
53	1.0244	2.894	70.50	76.07	.999	.999
54	1.2441	3.514	70.46	76.05	.998	1.000
55	1.4645	4.137	70.37	76.07	.997	.999
56	1.6846	4.759	70.37	76.05	.997	1.000
57	1.9041	5.379	70.44	76.05	.998	1.000
58	2.1245	6.001	70.42	76.04	.998	1.000
59	2.3445	6.623	70.35	76.04	.997	1.000
60	2.5642	7.244	70.31	76.05	.996	1.000
61	2.7842	7.865	70.37	76.05	.997	1.000
62	3.0044	8.487	70.21	76.06	.995	1.000

Table 15.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 5. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	72.139	72.139
FREE STREAM TEMPERATURE =	76.492	
WALL TEMPERATURE =	98.040	
WALL HEAT FLUX =	.04640	
FREE STREAM DENSITY =	.07404	
FREE STREAM KINEMATIC VISCOSITY =	.0001667	
DENSITY OF FLUID AT WALL =	.07118	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001787	
WALL/FREE STREAM DENSITY RATIO =	.96136	
LOCATION REYNOLDS NUMBER (REX) =	1889833.86	
INPUT VALUE OF VELOCITY DELTA =	.51000	
INPUT VALUE OF TEMPERATURE DELTA =	.61000	
CALCULATED DELTA =		.39201
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04909	.04854
MOMENTUM THICKNESS (THETA) =	.03233	.03246
ENERGY-DISSIPATION THICKNESS =	.05787	.05808
ENTHALPY THICKNESS =	.00261	.00283
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.51833	1.49534
SHAPE FACTOR 32 (ENERGY/THETA) =	1.78990	1.78916
MOMENTUM THICKNESS REYNOLDS NUMBER =	1166.04	1170.67
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1770.43	1750.55
SKIN FRICTION COEFFICIENT =	.004442	
FRICTION VELOCITY =	3.46736	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.01413
CLAUSERS 'DELTA' INTEGRAL =	-.86035	-.95107
CLAUSERS 'G' INTEGRAL =	5.82113	5.51612
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.04382	.04573
MOMENTUM THICKNESS - CONSTANT DENSITY =	.03283	.03297
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.33450	1.38653

LOCATION -X- 52.40000

Z = CENTERLINE

$K = 0.2 \times 10^{-6}$

Table 16.

JOB KLDM22x TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 5. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0049	.013	23.56	93.47	.327	.212	-14.010	6.795	5.832	7.972
2	.0058	.015	26.32	93.10	.365	.229	-13.215	7.590	6.308	9.427
3	.0066	.017	29.43	93.36	.408	.217	-12.317	8.486	5.969	10.720
4	.0075	.019	31.43	93.20	.436	.225	-11.741	9.064	6.184	12.176
5	.0092	.024	34.91	92.18	.484	.272	-10.738	10.067	7.479	14.924
6	.0108	.028	37.56	91.96	.521	.282	-9.972	10.833	7.758	17.512
7	.0115	.029	38.47	91.69	.533	.295	-9.709	11.096	8.102	18.320
8	.0135	.035	40.39	91.03	.560	.325	-9.156	11.649	8.948	21.877
9	.0154	.039	41.61	90.22	.577	.363	-8.804	12.001	9.980	24.949
10	.0178	.045	43.75	90.29	.606	.360	-8.167	12.618	9.896	28.830
11	.0192	.049	44.33	90.02	.614	.372	-8.021	12.785	10.233	31.094
12	.0217	.053	45.12	89.98	.626	.374	-7.791	13.014	10.286	33.519
13	.0227	.056	45.87	89.47	.636	.398	-7.577	13.226	10.946	36.753
14	.0246	.063	46.55	89.51	.645	.396	-7.380	13.425	10.892	39.825
15	.0263	.067	47.17	89.61	.654	.391	-7.202	13.603	10.764	42.574
16	.0282	.072	47.87	89.43	.664	.400	-6.999	13.806	10.996	45.646
17	.0346	.088	49.76	88.52	.690	.442	-6.453	14.352	12.150	55.995
18	.0418	.107	51.79	88.71	.718	.452	-5.866	14.937	12.421	67.637
19	.0483	.123	53.35	87.62	.740	.484	-5.418	15.387	13.302	78.147
20	.0546	.139	54.65	86.77	.758	.523	-5.043	15.762	14.388	88.334
21	.0614	.157	55.94	86.25	.775	.547	-4.672	16.133	15.047	99.329
22	.0667	.175	57.16	86.02	.792	.556	-4.320	16.485	15.341	111.133
23	.0747	.191	57.75	85.59	.801	.578	-4.149	16.656	15.887	120.634
24	.0818	.209	58.79	84.71	.815	.619	-3.851	16.954	17.014	132.315
25	.0868	.227	59.71	84.20	.822	.642	-3.699	17.106	17.663	143.633
26	.0948	.242	60.40	84.03	.837	.650	-3.366	17.419	17.888	153.335
27	.1017	.260	61.08	83.93	.847	.655	-3.190	17.615	18.015	164.492
28	.1067	.277	61.92	83.16	.856	.691	-2.948	17.857	18.998	175.810
29	.1146	.292	62.12	83.05	.861	.696	-2.890	17.915	19.138	185.350
30	.1216	.310	62.76	83.14	.870	.691	-2.705	18.100	19.016	196.669
31	.1267	.326	63.34	82.55	.876	.719	-2.537	18.269	19.777	206.149
32	.1484	.371	64.43	81.72	.893	.757	-2.223	18.582	20.634	235.152
33	.1632	.416	65.62	80.83	.910	.799	-1.880	18.925	21.974	263.934
34	.1804	.460	66.51	80.78	.922	.801	-1.622	19.183	22.033	291.745
35	.1963	.506	67.46	79.55	.935	.858	-1.350	19.455	23.601	320.689
36	.2157	.550	68.36	79.55	.948	.858	-1.090	19.715	23.601	348.823
37	.2337	.596	68.94	78.94	.956	.887	-.922	19.883	24.386	377.928
38	.2507	.640	69.38	78.77	.962	.894	-.796	20.009	24.600	405.416
39	.2665	.685	69.96	78.66	.970	.899	-.628	20.177	24.718	434.198
40	.2856	.729	70.51	78.02	.977	.929	-.471	20.334	25.556	461.848
41	.3037	.775	70.72	78.02	.980	.929	-.410	20.395	25.559	491.114
42	.3532	.901	71.47	77.07	.991	.973	-.194	20.611	26.763	571.153
43	.4033	1.029	71.92	76.90	.997	.981	-.063	20.742	26.987	652.162
44	.4533	1.156	72.00	76.76	.998	.987	-.040	20.765	27.161	733.009
45	.5034	1.284	72.07	76.56	.999	.996	-.020	20.786	27.390	814.018
46	.5535	1.412	72.16	76.52	1.000	.999	.006	20.812	27.476	895.027
47	.6035	1.540	72.16	76.51	1.000	.999	.007	20.812	27.489	975.874
48	.6536	1.667	72.09	76.49	.999	1.000	-.013	20.792	27.510	1056.883
49	.7036	1.795	72.13	76.49	1.000	1.000	-.002	20.803	27.515	1136.054
50	.7535	1.922	72.11	76.50	1.000	1.000	-.006	20.797	27.495	1218.416
51	.8039	2.051	72.11	76.48	1.000	1.000	-.008	20.797	27.517	1299.910
52	1.0235	2.611	72.15	76.50	1.000	1.000	.004	20.809	27.502	1654.991
53	1.2431	3.171	72.03	76.49	.998	1.000	-.033	20.772	27.509	2010.072
54	1.4634	3.733	72.00	76.49	.998	1.000	-.040	20.765	27.509	2366.284
55	1.6835	4.295	71.99	76.50	.998	1.	-.042	20.764	27.495	2722.174
56	1.9032	4.855	71.97	76.51	.996	.	-.049	20.756	27.488	3077.416
57	2.1236	5.417	72.07	76.51	.999	.999	-.021	20.784	27.488	3433.791
58	2.3437	5.979	71.94	76.52	.997	.999	-.057	20.748	27.474	3789.660
59	2.5632	6.539	71.93	76.51	.996	.999	-.069	20.716	27.488	4144.599
60	2.7831	7.100	71.80	76.51	.995	.999	-.097	20.708	27.488	4500.165
61	3.0033	7.661	71.90	76.52	.997	.999	-.070	20.735	27.473	4856.216

Table 16.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 6. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	72.213	72.213
FREE STREAM TEMPERATURE =	76.490	
WALL TEMPERATURE =	98.920	
WALL HEAT FLUX =	.04720	
FREE STREAM DENSITY =	.07404	
FREE STREAM KINEMATIC VISCOSITY =	.0001667	
DENSITY OF FLUID AT WALL =	.07106	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001792	
WALL/FREE STREAM DENSITY RATIO =	.95985	
LOCATION REYNOLDS NUMBER (REX) =	1891764.95	
INPUT VALUE OF VELOCITY DELTA =	.51000	
INPUT VALUE OF TEMPERATURE DELTA =	.61000	
CALCULATED DELTA =		.38613
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04837	.04785
MOMENTUM THICKNESS (THETA) =	.03160	.03187
ENERGY-DISSIPATION THICKNESS =	.05691	.05706
ENTHALPY THICKNESS =	.00294	.00295
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.52105	1.50158
SHAPE FACTOR 32 (ENERGY/THETA) =	1.78957	1.79042
MOMENTUM THICKNESS REYNOLDS NUMBER =	1148.17	1150.49
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1746.43	1727.55
SKIN FRICTION COEFFICIENT =	.004455	
FRICTION VELOCITY =	3.47856	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.01211
CLAUSERS 'DELTA' INTEGRAL =	-.65770	-.93220
CLAUSERS 'G' INTEGRAL =	5.65306	5.39033
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.04338	.04491
MOMENTUM THICKNESS - CONSTANT DENSITY =	.03233	.03240
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.34188	1.38608

LOCATION -X- 52.40000

Z = +6 INCHES

K = 0.2 x 10^{-6}

Table 17.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 6. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0041	.011	22.37	95.04	.310	.173	-14.328	6.431	4.875	6.661
2	.0051	.013	23.42	94.77	.324	.165	-14.027	6.732	5.220	8.299
3	.0056	.015	25.66	94.69	.356	.189	-13.376	7.383	5.321	9.431
4	.0073	.019	30.29	93.88	.419	.225	-12.052	8.708	6.335	11.857
5	.0086	.022	34.21	93.16	.474	.257	-10.924	9.835	7.245	13.960
6	.0101	.026	36.87	92.92	.511	.267	-10.160	10.600	7.537	16.387
7	.0109	.028	37.49	92.95	.519	.266	-9.963	10.777	7.503	17.661
8	.0132	.034	40.04	92.29	.554	.296	-9.249	11.511	8.338	21.402
9	.0148	.038	41.31	91.73	.572	.320	-8.663	11.877	9.033	23.990
10	.0173	.045	43.29	91.43	.599	.334	-8.315	12.444	9.412	28.034
11	.0187	.049	44.42	90.61	.615	.371	-7.969	12.770	10.449	30.299
12	.0203	.053	44.67	90.52	.619	.375	-7.919	12.841	10.560	32.887
13	.0223	.058	45.84	89.97	.635	.399	-7.581	13.178	11.255	36.122
14	.0239	.062	46.46	89.90	.644	.402	-7.397	13.363	11.339	38.711
15	.0260	.067	47.37	90.51	.656	.375	-7.143	13.617	10.576	42.108
16	.0277	.072	48.29	90.41	.669	.379	-6.876	13.883	10.693	44.858
17	.0341	.088	50.03	89.31	.693	.428	-6.377	14.382	12.075	55.211
18	.0411	.107	51.96	88.96	.720	.444	-5.821	14.936	12.519	66.535
19	.0481	.125	53.60	88.51	.742	.464	-5.352	15.408	13.091	77.858
20	.0542	.140	54.77	87.69	.758	.501	-5.015	15.745	14.120	87.726
21	.0609	.158	55.81	86.82	.773	.539	-4.715	16.045	15.210	98.564
22	.0652	.177	57.15	86.77	.791	.559	-4.330	16.429	15.774	110.373
23	.0741	.192	58.30	86.17	.807	.569	-4.000	16.759	16.029	119.918
24	.0812	.210	58.92	85.43	.816	.602	-3.822	16.937	16.962	131.403
25	.0879	.228	59.80	84.81	.826	.629	-3.570	17.190	17.732	142.241
26	.0940	.244	60.49	84.45	.838	.645	-3.369	17.390	18.183	152.109
27	.1011	.262	61.21	83.94	.848	.668	-3.162	17.598	18.832	163.595
28	.1079	.280	61.57	83.31	.853	.696	-3.059	17.700	19.622	174.595
29	.1140	.295	62.65	83.04	.868	.706	-2.751	18.009	19.959	184.462
30	.1208	.313	62.67	83.15	.871	.703	-2.666	18.074	19.821	195.463
31	.1282	.332	63.89	83.01	.885	.709	-2.392	18.367	20.000	207.433
32	.1452	.376	64.71	81.61	.896	.772	-2.158	18.601	21.758	234.934
33	.1627	.421	66.16	81.32	.915	.785	-1.757	19.003	22.122	263.243
34	.1803	.467	66.91	80.78	.927	.809	-1.523	19.236	22.807	291.714
35	.1981	.513	67.81	79.96	.939	.845	-1.265	19.494	23.830	320.508
36	.2152	.557	68.36	79.35	.947	.872	-1.109	19.651	24.593	348.170
37	.2328	.603	69.02	79.04	.956	.686	-.917	19.843	24.965	376.641
38	.2502	.648	69.79	79.15	.966	.681	-.697	20.063	24.852	404.789
39	.2681	.694	70.12	78.29	.971	.920	-.600	20.159	25.930	433.745
40	.2851	.738	70.55	78.01	.977	.932	-.478	20.282	26.287	461.245
41	.3032	.785	70.91	77.78	.982	.942	-.374	20.385	26.569	490.525
42	.3527	.914	71.63	77.46	.992	.957	-.168	20.592	26.974	570.599
43	.4030	1.044	71.86	76.82	.995	.985	-.101	20.658	27.774	651.968
44	.4532	1.174	71.97	76.61	.997	.995	-.071	20.689	28.041	733.175
45	.5029	1.302	72.23	76.64	1.000	.994	.005	20.764	28.011	813.573
46	.5531	1.433	72.15	76.51	.999	.999	-.018	20.742	28.163	894.780
47	.6030	1.562	72.21	76.46	1.000	1.000	-.002	20.757	28.202	975.501
48	.6529	1.691	72.26	76.47	1.001	1.001	.020	20.779	28.213	1056.223
49	.7032	1.821	72.21	76.51	1.000	.999	-.001	20.758	28.173	1137.591
50	.7528	1.950	72.22	76.49	1.000	1.000	.001	20.761	28.194	1217.827
51	.8031	2.080	72.29	76.50	1.001	.999	.023	20.782	28.179	1299.196
52	1.0228	2.649	72.16	76.50	1.000	1.000	-.010	20.749	28.187	1654.597
53	1.2426	3.218	72.25	76.50	1.001	1.000	.011	20.771	28.187	2010.160
54	1.4630	3.789	72.16	76.49	1.000	1.000	-.008	20.751	28.193	2366.694
55	1.6829	4.358	72.10	76.51	.998	.999	-.033	20.726	28.172	2722.418
56	1.9026	4.927	72.05	76.51	.998	.999	-.046	20.714	28.166	3077.820
57	2.1229	5.498	71.95	76.51	.996	.999	-.076	20.683	28.166	3434.191
58	2.3431	6.068	71.97	76.50	.997	1.000	-.070	20.690	28.180	3790.401
59	2.5627	6.637	71.93	76.51	.996	.999	-.061	20.679	28.173	4145.641
60	2.7827	7.207	71.95	76.51	.996	.999	-.077	20.682	28.166	4501.527
61	3.0032	7.778	71.93	76.51	.996	.999	-.081	20.679	28.173	4858.223

Table 17.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 7. GRID NO. 1

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	72.288	72.288
FREE STREAM TEMPERATURE	=	76.094	
WALL TEMPERATURE	=	100.260	
WALL HEAT FLUX	=	.04710	
FREE STREAM DENSITY	=	.07498	
FREE STREAM KINEMATIC VISCOSITY	=	.0001645	
DENSITY OF FLUID AT WALL	=	.07174	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001778	
WALL/FREE STREAM DENSITY RATIO	=	.95681	
LOCATION REYNOLDS NUMBER (REX)	=	1919040.60	
INPUT VALUE OF VELOCITY DELTA	=	.46000	
INPUT VALUE OF TEMPERATURE DELTA	=	.56000	
CALCULATED DELTA	=		.36318
DELTA 99.5% INPUT	=	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.04579	.04496
MOMENTUM THICKNESS (THETA)	=	.02953	.02959
ENERGY-DISSIPATION THICKNESS	=	.05272	.05293
ENTHALPY THICKNESS	=	.00294	.00297
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.55057	1.51935
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.78521	1.78884
MOMENTUM THICKNESS REYNOLDS NUMBER	=	1061.56	1083.68
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1677.03	1646.48
SKIN FRICTION COEFFICIENT	=	.004512	
FRICTION VELOCITY	=	3.51004	
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		.00065
CLAUSERS 'DELTA' INTEGRAL	=	-.80391	-.86499
CLAUSERS 'G' INTEGRAL	=	5.42947	5.03676
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.04095	.04200
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.03006	.03013
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.36210	1.39419

LOCATION -X- 52.40000

Z = -6 INCHES

K = 0.2 X 10^{-6}

Table 18.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 7. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0038	.011	20.46	95.94	.283	.180	-14.759	5.636	5.571	6.300
2	.0053	.015	23.56	95.63	.326	.192	-13.877	6.718	5.972	8.767
3	.0060	.017	26.24	95.50	.363	.198	-13.118	7.477	6.137	9.919
4	.0068	.019	28.24	94.31	.391	.247	-12.550	8.045	7.661	11.234
5	.0082	.023	31.61	95.24	.440	.209	-11.533	9.062	6.472	13.537
6	.0097	.027	34.19	94.75	.473	.229	-10.854	9.741	7.092	16.005
7	.0112	.031	36.45	93.78	.504	.269	-10.211	10.384	8.344	18.472
8	.0118	.033	37.69	93.57	.521	.277	-9.858	10.737	8.604	19.459
9	.0139	.038	40.01	93.99	.553	.260	-9.197	11.398	8.067	22.913
10	.0159	.044	41.82	93.12	.579	.296	-8.681	11.914	9.186	26.203
11	.0180	.050	42.95	92.10	.594	.338	-8.359	12.236	10.493	29.657
12	.0196	.054	44.66	91.86	.618	.348	-7.870	12.724	10.803	32.289
13	.0210	.058	44.95	91.99	.622	.343	-7.789	12.806	10.638	34.592
14	.0229	.063	46.11	91.88	.638	.347	-7.457	13.136	10.779	37.717
15	.0250	.069	46.37	90.95	.641	.386	-7.363	13.211	11.976	41.171
16	.0270	.074	47.80	90.59	.661	.401	-6.976	13.618	12.429	44.461
17	.0287	.079	48.61	90.60	.672	.400	-6.747	13.846	12.418	47.257
18	.0352	.097	50.64	90.45	.701	.407	-6.166	14.428	12.617	57.949
19	.0422	.116	52.63	89.19	.727	.459	-5.629	14.966	14.233	69.463
20	.0490	.135	54.13	88.59	.749	.483	-5.173	15.422	15.003	80.648
21	.0551	.152	55.72	87.76	.771	.518	-4.721	15.874	16.067	90.682
22	.0620	.171	57.09	86.70	.790	.561	-4.331	16.264	17.425	102.031
23	.0692	.191	57.96	86.15	.802	.584	-4.081	16.514	18.134	113.874
24	.0750	.207	59.30	85.98	.820	.591	-3.700	16.895	18.353	123.415
25	.0820	.226	59.79	85.40	.827	.615	-3.561	17.034	19.099	134.929
26	.0893	.246	60.94	83.85	.843	.679	-3.234	17.360	21.080	146.936
27	.0950	.262	61.79	83.60	.855	.690	-2.990	17.605	21.401	156.312
28	.1019	.281	62.20	83.39	.860	.698	-2.873	17.722	21.673	167.661
29	.1090	.300	63.00	83.11	.872	.710	-2.645	17.950	22.027	179.340
30	.1150	.317	63.41	83.43	.877	.697	-2.530	18.064	21.622	189.209
31	.1220	.336	64.21	82.95	.888	.717	-2.302	18.292	22.240	200.723
32	.1291	.356	64.77	81.85	.896	.762	-2.142	18.453	23.646	212.402
33	.1459	.402	65.80	80.96	.910	.799	-1.849	18.746	24.785	240.036
34	.1637	.451	66.92	80.46	.926	.819	-1.530	19.064	25.427	269.314
35	.1809	.498	67.57	79.42	.935	.863	-1.346	19.249	26.770	297.606
36	.1990	.548	68.67	79.31	.950	.867	-1.031	19.563	26.909	327.378
37	.2156	.594	69.25	79.14	.958	.874	-.867	19.728	27.124	355.012
38	.2340	.644	69.83	78.65	.966	.894	-.702	19.893	27.760	384.949
39	.2509	.691	70.23	78.05	.971	.919	-.588	20.007	28.529	412.747
40	.2668	.740	70.63	77.49	.977	.942	-.473	20.121	29.248	442.190
41	.2860	.786	70.99	77.17	.982	.956	-.369	20.225	29.658	470.482
42	.3039	.837	71.16	77.72	.984	.933	-.321	20.274	28.947	499.925
43	.3537	.974	71.81	76.81	.993	.970	-.137	20.458	30.116	581.839
44	.4040	1.112	72.07	76.52	.997	.982	-.063	20.531	30.486	664.576
45	.4540	1.250	72.22	76.26	.999	.993	-.020	20.575	30.826	746.820
46	.5039	1.386	72.26	76.14	1.000	.998	-.009	20.586	30.981	828.899
47	.5541	1.526	72.26	76.20	1.000	.996	-.002	20.593	30.900	911.471
48	.6041	1.663	72.33	76.09	1.001	1.000	.011	20.606	31.045	993.715
49	.6543	1.802	72.30	76.10	1.000	1.000	.004	20.599	31.027	1076.287
50	.7038	1.938	72.29	76.10	1.000	1.000	.002	20.597	31.032	1157.708
51	.7538	2.076	72.25	76.06	.999	1.001	-.012	20.583	31.078	1239.951
52	.8041	2.214	72.29	76.09	1.000	1.000	-.001	20.594	31.041	1322.688
53	1.0238	2.819	72.23	76.07	.999	1.001	-.016	20.579	31.071	1664.066
54	1.2437	3.425	72.12	76.07	.998	1.001	-.048	20.547	31.072	2045.773
55	1.4639	4.031	72.13	76.04	.998	1.002	-.045	20.550	31.107	2407.973
56	1.6839	4.637	72.01	76.04	.996	1.002	-.061	20.514	31.106	2769.844
57	1.9037	5.242	72.10	76.05	.997	1.002	-.052	20.542	31.093	3131.366
58	2.1240	5.848	72.15	76.03	.998	1.003	-.040	20.555	31.121	3493.751
59	2.3439	6.454	72.09	76.03	.997	1.003	-.056	20.539	31.114	3855.457
60	2.5637	7.059	71.93	76.04	.995	1.002	-.104	20.491	31.100	4217.000
61	2.7836	7.665	71.95	76.04	.995	1.002	-.097	20.497	31.107	4576.706
62	3.0040	8.271	71.98	76.04	.996	1.002	-.088	20.506	31.099	4941.235

Table 18.

JOB KLDM22X TAPE 4752R- FILES 69-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 2. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	76.348	76.348
FREE STREAM TEMPERATURE =	77.143	
WALL TEMPERATURE =	96.050	
WALL HEAT FLUX =	.04690	
FREE STREAM DENSITY =	.07395	
FREE STREAM KINEMATIC VISCOSITY =	.0001670	
DENSITY OF FLUID AT WALL =	.07143	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001776	
WALL/FREE STREAM DENSITY RATIO =	.96596	
LOCATION REYNOLDS NUMBER (REX) =	2300522.81	
INPUT VALUE OF VELOCITY DELTA =	.51000	
INPUT VALUE OF TEMPERATURE DELTA =	.66000	
CALCULATED DELTA =		.44939
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.05676	.05695
MOMENTUM THICKNESS (THETA) =	.03881	.03905
ENERGY-DISSIPATION THICKNESS =	.06981	.06998
ENTHALPY THICKNESS =	.00297	.00297
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.46246	1.45848
SHAPE FACTOR 32 (ENERGY/THETA) =	1.79892	1.79218
MOMENTUM THICKNESS REYNOLDS NUMBER =	1478.14	1487.22
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	2161.71	2169.08
SKIN FRICTION COEFFICIENT =	.004161	
FRICTION VELOCITY =	3.54340	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.08384
CLAUSERS 'DELTA' INTEGRAL =	-1.03576	-1.16341
CLAUSERS 'G' INTEGRAL =	6.72536	6.70087
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.05094	.05399
MOMENTUM THICKNESS - CONSTANT DENSITY =	.03931	.03956
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.29560	1.36484

LOCATION -X- 60.40000

Z = CENTERLINE

$K = 0.2 \times 10^{-6}$

Table 19.

JOB KLDM22X TAPE 4752P- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 2. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0057	.013	30.72	91.26	.397	.254	-12.990	8.557	6.210	9.528
2	.0067	.015	33.20	90.78	.435	.279	-12.178	9.368	6.826	11.191
3	.0082	.018	37.81	90.37	.495	.300	-10.675	10.872	7.356	13.685
4	.0089	.020	39.11	90.10	.512	.315	-10.510	11.036	7.712	14.649
5	.0098	.022	40.43	89.71	.530	.335	-10.136	11.411	8.210	16.346
6	.0116	.026	43.13	89.42	.565	.350	-9.374	12.172	8.581	19.339
7	.0131	.029	44.65	89.15	.585	.365	-8.944	12.602	8.934	21.833
8	.0138	.031	45.26	88.94	.593	.376	-8.773	12.774	9.215	22.997
9	.0155	.035	46.96	88.30	.615	.410	-8.294	13.253	10.033	26.489
10	.0178	.040	48.09	88.20	.630	.415	-7.976	13.571	10.166	29.649
11	.0201	.045	49.20	87.92	.644	.430	-7.663	13.884	10.536	33.473
12	.0216	.048	49.55	87.77	.649	.438	-7.562	13.984	10.718	35.967
13	.0231	.051	50.09	87.68	.656	.443	-7.413	14.134	10.846	38.462
14	.0246	.055	50.66	87.54	.664	.450	-7.250	14.297	11.020	41.289
15	.0271	.060	51.42	87.37	.673	.459	-7.035	14.511	11.244	45.113
16	.0291	.065	51.89	87.23	.680	.467	-6.903	14.643	11.425	48.439
17	.0306	.066	52.17	87.13	.683	.472	-6.823	14.723	11.551	50.933
18	.0370	.082	53.74	86.83	.705	.488	-6.367	15.180	11.942	61.575
19	.0440	.098	55.06	86.44	.721	.508	-6.063	15.544	12.449	73.215
20	.0511	.114	56.26	86.05	.737	.529	-5.669	15.877	12.945	85.021
21	.0568	.126	56.90	85.70	.745	.547	-5.466	16.059	13.403	94.500
22	.0639	.142	57.82	85.46	.757	.560	-5.229	16.317	13.720	106.306
23	.0706	.158	58.91	85.25	.772	.571	-4.922	16.625	13.989	117.946
24	.0770	.171	59.66	85.10	.781	.579	-4.727	16.819	14.184	128.089
25	.0838	.187	60.31	84.91	.790	.589	-4.526	17.021	14.423	139.397
26	.0909	.202	60.93	84.66	.798	.602	-4.351	17.196	14.754	151.203
27	.0972	.216	61.76	84.14	.809	.630	-4.116	17.430	15.432	161.679
28	.1042	.232	62.47	84.23	.818	.625	-3.915	17.631	15.309	173.319
29	.1110	.247	62.96	83.78	.825	.649	-3.773	17.774	15.886	184.626
30	.1168	.260	63.69	83.93	.834	.641	-3.582	17.965	15.699	194.271
31	.1237	.275	64.00	83.89	.838	.643	-3.465	18.062	15.745	205.744
32	.1307	.291	64.58	83.65	.846	.656	-3.321	18.226	16.067	217.384
33	.1478	.329	66.05	82.93	.865	.694	-2.907	18.639	16.989	245.819
34	.1656	.369	67.18	82.46	.880	.719	-2.566	18.960	17.599	275.418
35	.1827	.407	68.26	82.03	.894	.742	-2.277	19.270	18.161	303.852
36	.2048	.447	69.13	81.36	.905	.777	-2.037	19.510	19.025	333.950
37	.2179	.485	70.13	81.12	.919	.789	-1.754	19.793	19.333	362.385
38	.2360	.525	71.07	80.46	.931	.824	-1.491	20.056	20.189	392.482
39	.2528	.563	71.82	80.04	.941	.847	-1.279	20.268	20.743	420.418
40	.2711	.603	72.46	79.95	.949	.852	-1.091	20.455	20.857	450.848
41	.2877	.640	73.29	79.62	.959	.869	-.873	20.674	21.279	478.452
42	.3060	.681	73.77	79.20	.966	.891	-.727	20.820	21.625	508.882
43	.3556	.791	74.84	78.48	.980	.929	-.426	21.120	22.756	591.359
44	.4057	.903	75.68	77.93	.991	.959	-.169	21.358	23.473	674.668
45	.4560	1.015	76.05	77.46	.996	.983	-.083	21.464	24.074	758.309
46	.5062	1.126	76.26	77.31	.999	.991	-.019	21.527	24.269	841.784
47	.5559	1.237	76.26	77.23	.999	.995	-.020	21.527	24.375	924.428
48	.6058	1.348	76.42	77.16	1.001	.998	.020	21.567	24.447	1007.404
49	.6558	1.459	76.35	77.13	1.000	1.001	-.000	21.546	24.503	1090.547
50	.7061	1.571	76.36	77.15	1.000	1.000	.005	21.551	24.481	1174.188
51	.7560	1.682	76.27	77.14	.999	1.000	-.022	21.525	24.490	1257.164
52	.8056	1.793	76.26	77.14	.999	1.000	-.019	21.528	24.497	1339.974
53	1.0260	2.283	76.31	77.13	1.000	1.001	-.011	21.536	24.510	1706.133
54	1.2456	2.772	76.16	77.15	.998	1.000	-.053	21.494	24.482	2071.295
55	1.4657	3.262	76.16	77.14	.998	1.000	-.046	21.499	24.497	2437.288
56	1.6860	3.752	76.13	77.12	.997	1.001	-.062	21.484	24.518	2803.614
57	1.9059	4.240	76.07	77.12	.996	1.001	-.078	21.469	24.517	3168.609
58	2.1260	4.731	76.11	77.13	.997	1.001	-.068	21.478	24.503	3535.268
59	2.3459	5.220	76.03	77.12	.996	1.001	-.069	21.457	24.519	3900.928
60	2.5655	5.709	75.99	77.09	.995	1.003	-.103	21.444	24.553	4266.090
61	2.7855	6.198	76.01	77.10	.996	1.002	-.097	21.450	24.540	4631.917
62	3.0058	6.689	75.98	77.03	.995	1.006	-.104	21.442	24.636	4998.243

Table 19.

JOB KLUM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 3. GRID NO. 1

BOUNDARY LAYER PROPERTIES

		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	76.627	76.627
FREE STREAM TEMPERATURE	=	77.125	
WALL TEMPERATURE	=	96.490	
WALL HEAT FLUX	=	.04670	
FREE STREAM DENSITY	=	.07395	
FREE STREAM KINEMATIC VISCOSITY	=	.0001670	
DENSITY OF FLUID AT WALL	=	.07137	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001778	
WALL/FREE STREAM DENSITY RATIO	=	.96516	
LOCATION REYNOLDS NUMBER (REX)	=	2309051.12	
INPUT VALUE OF VELOCITY DELTA	=	.56000	
INPUT VALUE OF TEMPERATURE DELTA	=	.66000	
CALCULATED DELTA	=		.45207
DELTA 99.5% INPUT	=	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.05902	.05909
MOMENTUM THICKNESS (THETA)	=	.04010	.04024
ENERGY-DISSIPATION THICKNESS	=	.07190	.07200
ENTHALPY THICKNESS	=	.00319	.00319
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.47175	1.46848
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.79311	1.78917
MOMENTUM THICKNESS REYNOLDS NUMBER	=	1532.95	1538.38
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	2256.12	2259.09
SKIN FRICTION COEFFICIENT	=	.004072	
FRICTION VELOCITY	=	3.51956	
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		.13109
CLAUSERS 'DELTA' INTEGRAL	=	-1.11060	-1.21744
CLAUSERS 'G' INTEGRAL	=	7.20210	7.16863
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.05343	.05592
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.04065	.04079
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.31439	1.37072

LOCATION -X- 60.40000

Z = +6 INCHES

K = 0.2 x 10^{-6}

Table 20.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 3. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0048	.011	26.62	92.43	.347	.209	-14.208	7.564	5.237	7.966
2	.0060	.013	29.75	91.83	.388	.241	-13.319	8.452	6.016	9.946
3	.0070	.016	33.00	91.42	.431	.262	-12.397	9.375	6.541	11.595
4	.0078	.017	35.42	91.14	.462	.276	-11.709	10.063	6.910	12.914
5	.0092	.020	38.05	90.47	.497	.311	-10.960	10.812	7.778	15.224
6	.0107	.024	40.70	90.00	.531	.335	-10.209	11.563	8.375	17.698
7	.0121	.027	42.62	89.87	.556	.342	-9.661	12.111	8.541	20.007
8	.0129	.029	43.31	89.87	.565	.342	-9.467	12.304	8.544	21.326
9	.0152	.034	45.1c	89.51	.590	.361	-8.935	12.836	9.013	25.120
10	.0170	.038	46.36	88.90	.605	.392	-8.598	13.173	9.801	28.089
11	.0192	.043	47.65	88.57	.622	.409	-8.232	13.540	10.227	31.717
12	.0207	.046	48.37	88.50	.631	.413	-8.029	13.742	10.320	34.191
13	.0223	.049	48.99	88.46	.639	.415	-7.852	13.920	10.366	36.665
14	.0240	.053	49.53	88.08	.646	.434	-7.698	14.074	10.653	39.634
15	.0261	.058	50.13	88.41	.654	.417	-7.529	14.242	10.427	43.098
16	.0261	.062	50.81	88.42	.663	.417	-7.335	14.437	10.419	46.396
17	.0296	.066	51.27	88.24	.669	.426	-7.206	14.566	10.653	48.870
18	.0356	.079	52.70	87.41	.688	.469	-6.799	14.972	11.717	59.097
19	.0430	.095	54.22	87.12	.708	.484	-6.367	15.404	12.094	70.972
20	.0499	.110	55.31	86.76	.722	.502	-6.058	15.714	12.557	82.352
21	.0561	.124	56.29	86.55	.735	.513	-5.777	15.995	12.832	92.579
22	.0628	.139	57.17	86.04	.746	.540	-5.529	16.243	13.492	103.629
23	.0699	.155	58.31	85.34	.761	.550	-5.204	16.568	13.750	115.340
24	.0762	.169	59.21	85.69	.773	.556	-4.947	16.825	13.947	125.731
25	.0831	.184	59.92	85.23	.782	.582	-4.747	17.024	14.540	137.111
26	.0899	.199	60.57	84.72	.791	.608	-4.561	17.211	15.199	148.327
27	.0962	.213	61.24	84.63	.799	.613	-4.371	17.400	15.315	158.718
28	.1031	.226	61.95	84.64	.809	.612	-4.169	17.603	15.294	170.098
29	.1100	.243	62.61	84.53	.817	.618	-3.983	17.789	15.442	181.479
30	.1164	.256	63.29	84.23	.826	.633	-3.788	17.984	15.826	192.035
31	.1233	.273	63.86	83.86	.833	.652	-3.627	18.145	16.302	203.415
32	.1301	.288	64.23	83.60	.838	.666	-3.522	18.250	16.643	214.631
33	.1471	.325	66.04	82.93	.862	.700	-3.009	18.763	17.510	242.670
34	.1647	.364	67.29	82.41	.876	.727	-2.652	19.119	18.172	271.699
35	.1815	.402	68.09	81.97	.889	.750	-2.427	19.345	18.741	300.068
36	.1998	.442	69.46	81.74	.907	.762	-2.031	19.741	19.039	329.591
37	.2169	.480	70.44	81.39	.919	.780	-1.758	20.014	19.492	357.795
38	.2353	.521	71.15	80.75	.929	.813	-1.554	20.217	20.316	388.144
39	.2520	.558	72.06	80.85	.940	.808	-1.297	20.474	20.194	415.688
40	.2703	.598	72.65	80.43	.948	.829	-1.131	20.640	20.734	445.871
41	.2868	.634	73.34	79.77	.957	.864	-.935	20.837	21.590	473.086
42	.3049	.675	73.76	79.27	.963	.889	-.815	20.957	22.233	502.939
43	.3547	.785	75.02	78.71	.979	.918	-.456	21.316	22.949	585.077
44	.4047	.896	75.74	79.10	.988	.950	-.252	21.520	23.742	667.710
45	.4549	1.006	76.07	77.70	.993	.971	-.159	21.613	24.263	750.343
46	.5048	1.117	76.46	77.41	.998	.985	-.047	21.725	24.628	832.646
47	.5549	1.226	76.53	77.28	.999	.992	-.027	21.744	24.799	915.279
48	.6053	1.339	76.66	77.20	1.001	.996	.015	21.786	24.899	998.406
49	.6549	1.449	76.56	77.14	.999	.999	-.014	21.758	24.979	1080.214
50	.7053	1.560	76.62	77.14	1.000	.999	-.001	21.771	24.984	1163.342
51	.7549	1.670	76.60	77.14	1.000	.999	-.008	21.764	24.986	1245.150
52	.8048	1.780	76.59	77.10	.999	1.001	-.012	21.760	25.030	1327.453
53	1.0249	2.267	76.55	77.07	.999	1.003	-.021	21.750	25.070	1690.477
54	1.2447	2.753	76.56	77.10	.999	1.001	-.018	21.753	25.029	2053.006
55	1.4648	3.240	76.59	77.01	.999	1.006	-.011	21.761	25.142	2416.030
56	1.6846	3.727	76.34	77.07	.996	1.003	-.061	21.690	25.077	2778.889
57	1.9046	4.213	76.35	77.05	.996	1.004	-.079	21.693	25.101	3141.418
58	2.1248	4.700	76.26	76.96	.995	1.007	-.104	21.667	25.186	3504.607
59	2.3448	5.187	76.28	77.01	.996	1.006	-.098	21.674	25.143	3867.466
60	2.5647	5.673	76.26	76.96	.995	1.008	-.105	21.666	25.208	4230.159
61	2.7846	6.160	76.25	76.96	.995	1.009	-.108	21.663	25.215	4592.854
62	3.0053	6.648	76.25	76.96	.995	1.008	-.108	21.664	25.207	4956.867

Table 20.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 1. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	81.146	81.146
FREE STREAM TEMPERATURE =	76.369	
WALL TEMPERATURE =	94.350	
WALL HEAT FLUX =	.04770	
FREE STREAM DENSITY =	.07405	
FREE STREAM KINEMATIC VISCOSITY =	.0001666	
DENSITY OF FLUID AT WALL =	.07165	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001766	
WALL/FREE STREAM DENSITY RATIO =	.96755	
LOCATION REYNOLDS NUMBER (REX) =	2776012.91	
INPUT VALUE OF VELOCITY DELTA =	.56000	
INPUT VALUE OF TEMPERATURE DELTA =	.66000	
CALCULATED DELTA =		.50854
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.06396	.06413
MOMENTUM THICKNESS (THETA) =	.04413	.04438
ENERGY-DISSIPATION THICKNESS =	.07937	.07954
ENTHALPY THICKNESS =	.00330	.00330
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.44938	1.44509
SHAPE FACTOR 32 (ENERGY/THETA) =	1.79844	1.79231
MOMENTUM THICKNESS REYNOLDS NUMBER =	1791.02	1801.15
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	2595.86	2602.81
SKIN FRICTION COEFFICIENT =	.003967	
FRICTION VELOCITY =	3.67412	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.11173
CLAUSERS 'DELTA' INTEGRAL =	-1.21163	-1.34417
CLAUSERS 'G' INTEGRAL =	7.81323	7.77080
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.05778	.06086
MOMENTUM THICKNESS - CONSTANT DENSITY =	.04467	.04493
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.29331	1.35457

LOCATION -X- 68.40000

Z = CENTERLINE

K = 0.2 x 10^{-6}

Table 21.

JOB KLDM22X TAPE 4752R- FILES 89-111, RUN 2, PTS.1-23 10/15/80

RUN NO. 2. POINT 1. GRID NO. 1

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0056	.011	32.26	89.41	.398	.275	-13.301	8.785	6.542	10.107
2	.0073	.014	37.61	88.86	.464	.306	-11.849	10.237	7.277	12.707
3	.0079	.016	39.13	88.67	.482	.316	-11.436	10.649	7.521	13.747
4	.0093	.018	42.05	88.25	.518	.339	-10.642	11.444	8.080	16.174
5	.0100	.020	43.34	88.04	.534	.351	-10.269	11.796	8.358	17.387
6	.0117	.023	45.62	87.51	.562	.380	-9.669	12.416	9.062	20.334
7	.0133	.026	47.29	87.27	.583	.394	-9.215	12.871	9.381	23.108
8	.0141	.028	48.05	87.21	.592	.397	-9.008	13.078	9.455	24.495
9	.0163	.032	49.56	86.90	.611	.414	-8.598	13.486	9.869	28.309
10	.0181	.036	50.62	86.60	.624	.431	-8.347	13.779	10.270	31.429
11	.0201	.040	51.46	86.44	.634	.440	-8.079	14.007	10.478	34.896
12	.0217	.043	52.24	86.19	.644	.454	-7.854	14.232	10.813	37.670
13	.0226	.045	52.54	86.04	.647	.462	-7.786	14.300	11.007	39.750
14	.0251	.049	53.22	86.06	.656	.461	-7.601	14.485	10.984	43.564
15	.0269	.053	53.71	85.99	.662	.465	-7.466	14.619	11.075	46.684
16	.0291	.057	54.44	85.80	.671	.476	-7.269	14.816	11.331	50.498
17	.0307	.060	54.79	85.61	.675	.486	-7.173	14.913	11.570	53.272
18	.0371	.073	56.16	85.22	.692	.508	-6.800	15.286	12.097	64.366
19	.0441	.087	57.59	84.84	.710	.523	-6.410	15.676	12.462	76.501
20	.0514	.101	58.66	84.62	.723	.530	-6.119	15.967	12.627	89.156
21	.0569	.112	59.52	84.74	.734	.535	-5.865	16.201	12.732	98.690
22	.0641	.126	60.48	84.45	.745	.550	-5.624	16.461	13.111	111.172
23	.0714	.140	61.44	84.20	.757	.564	-5.364	16.722	13.439	123.480
24	.0779	.151	62.08	83.90	.765	.561	-5.196	16.886	13.639	133.361
25	.0841	.165	62.97	83.97	.776	.577	-4.948	17.138	13.746	145.642
26	.0909	.179	63.74	83.65	.785	.595	-4.743	17.343	14.172	157.630
27	.0971	.191	64.33	83.51	.793	.603	-4.576	17.509	14.359	168.378
28	.1038	.204	64.90	83.16	.800	.622	-4.423	17.663	14.615	179.993
29	.1106	.218	65.70	83.14	.810	.624	-4.205	17.881	14.851	192.128
30	.1168	.230	66.14	83.00	.815	.631	-4.085	18.001	15.038	202.529
31	.1242	.244	66.69	82.90	.822	.633	-3.935	18.151	15.086	215.357
32	.1314	.258	67.11	82.75	.827	.645	-3.820	18.265	15.366	227.838
33	.1479	.291	68.50	82.10	.844	.681	-3.442	18.643	16.227	256.442
34	.1657	.326	69.59	81.86	.858	.694	-3.145	18.941	16.538	287.299
35	.1829	.360	70.95	81.61	.874	.708	-2.775	19.310	16.871	317.116
36	.2013	.396	71.99	81.30	.887	.726	-2.491	19.594	17.290	349.013
37	.2178	.428	72.93	80.78	.899	.755	-2.237	19.849	17.971	377.616
38	.2358	.464	73.88	80.54	.910	.768	-1.979	20.107	18.295	408.820
39	.2532	.498	74.95	80.37	.924	.777	-1.667	20.399	18.515	438.983
40	.2708	.533	75.58	79.91	.930	.803	-1.537	20.549	19.128	469.493
41	.2883	.567	76.24	79.49	.940	.826	-1.336	20.750	19.679	499.830
42	.3059	.602	77.05	79.63	.950	.819	-1.114	20.972	19.504	530.340
43	.3557	.700	78.61	78.45	.969	.884	-.691	21.395	21.054	616.670
44	.4083	.799	79.80	77.70	.983	.926	-.365	21.720	22.051	704.387
45	.4564	.898	80.38	77.14	.991	.957	-.206	21.877	22.794	791.237
46	.5061	.995	80.92	76.87	.997	.972	-.062	22.023	23.153	877.394
47	.5558	1.093	81.09	76.64	.999	.985	-.015	22.071	23.462	963.551
48	.6056	1.191	81.09	76.50	.999	.993	-.015	22.070	23.647	1050.227
49	.6556	1.290	81.16	76.41	1.000	.998	.003	22.089	23.763	1136.904
50	.7060	1.388	81.19	76.41	1.001	.998	.012	22.098	23.764	1223.928
51	.7559	1.486	81.16	76.37	1.000	1.000	.005	22.091	23.818	1310.431
52	.8062	1.585	81.13	76.33	1.000	1.002	-.004	22.082	23.867	1397.628
53	1.0259	2.017	81.12	76.36	1.000	1.001	-.006	22.079	23.834	1776.485
54	1.2456	2.449	81.04	76.33	.999	1.002	-.028	22.058	23.863	2159.343
55	1.4658	2.882	80.97	76.35	.998	1.001	-.047	22.039	23.842	2541.067
56	1.6863	3.316	80.93	76.33	.998	1.002	-.053	22.033	23.871	2923.312
57	1.9057	3.747	80.98	76.34	.998	1.002	-.046	22.046	23.855	3303.649
58	2.1263	4.181	80.83	76.37	.996	1.000	-.066	21.999	23.819	3686.067
59	2.3459	4.613	80.76	76.36	.995	1.001	-.105	21.981	23.834	4066.752
60	2.5657	5.045	80.83	76.37	.996	1.000	-.066	21.999	23.811	4447.783
61	2.7856	5.478	80.82	76.39	.996	.999	-.086	21.997	23.789	4828.967
62	3.0059	5.911	80.75	76.38	.995	.999	-.107	21.979	23.797	5210.885

Table 21.

KLDM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 26. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	52.950	52.950
FREE STREAM TEMPERATURE =	74.513	
WALL TEMPERATURE =	96.020	
WALL HEAT FLUX =	.04660	
FREE STREAM DENSITY =	.07481	
FREE STREAM KINEMATIC VISCOSITY =	.0001645	
DENSITY OF FLUID AT WALL =	.07191	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001764	
WALL/FREE STREAM DENSITY RATIO =	.96130	
LOCATION REYNOLDS NUMBER (REX) =	118025.11	
INPUT VALUE OF VELOCITY DELTA =	.07100	
INPUT VALUE OF TEMPERATURE DELTA =	.07100	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.07100	
DISPLACEMENT THICKNESS (DELSTAR) =	.02083	.01495
MOMENTUM THICKNESS (THETA) =	.00843	.00840
ENERGY-DISSIPATION THICKNESS =	.01344	.01431
ENTHALPY THICKNESS =	.00024	.00038
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.47042	1.78076
SHAPE FACTOR 32 (ENERGY/THETA) =	1.59358	1.70431
MOMENTUM THICKNESS REYNOLDS NUMBER =	226.16	225.25
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	558.71	401.11
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.25444	-.24295
CLAUSERS 'G' INTEGRAL =	3.34750	1.68010
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.01793	.01457
MOMENTUM THICKNESS - CONSTANT DENSITY =	.00855	.00853
SHAPE FACTOR 12 - CONSTANT DENSITY =	2.09687	1.70871

LOCATION -X- 4.40000

Z = CENTERLINE

K = 0.2 x 10^{-6}

Table 22.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 26. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.075	10.96	93.24	.206	.129
2	.0067	.095	11.76	92.03	.222	.186
3	.0074	.105	12.06	91.37	.228	.216
4	.0085	.120	13.88	90.50	.262	.257
5	.0097	.137	14.95	89.57	.282	.300
6	.0112	.156	17.67	88.34	.334	.357
7	.0127	.179	19.53	87.23	.369	.409
8	.0134	.189	20.61	86.75	.389	.431
9	.0155	.219	23.47	85.10	.443	.508
10	.0177	.250	26.35	83.56	.498	.579
11	.0195	.275	28.53	82.54	.539	.627
12	.0212	.299	30.52	81.50	.576	.675
13	.0226	.319	32.24	80.73	.609	.711
14	.0247	.348	34.59	79.81	.653	.764
15	.0263	.371	36.29	78.99	.685	.792
16	.0286	.403	38.37	77.91	.725	.842
17	.0302	.426	40.01	77.42	.756	.865
18	.0363	.512	44.44	76.15	.839	.924
19	.0436	.615	48.02	75.13	.907	.971
20	.0504	.710	50.60	74.70	.952	.991
21	.0567	.799	51.76	74.55	.976	.998
22	.0637	.898	52.36	74.53	.989	.999
23	.0705	.993	52.70	74.53	.995	.999
24	.0763	1.075	52.89	74.52	.999	1.000
25	.0836	1.178	52.93	74.51	1.000	1.000
26	.0907	1.278	53.03	74.51	1.001	1.000
27	.0966	1.361	53.10	74.50	1.003	1.001
28	.1037	1.461	53.04	74.50	1.002	1.001
29	.1104	1.555	53.17	74.51	1.004	1.000
30	.1164	1.640	53.01	74.51	1.001	1.000
31	.1235	1.740	52.96	74.51	1.000	1.000
32	.1306	1.840	52.98	74.51	1.001	1.000
33	.1473	2.075	53.15	74.49	1.004	1.001
34	.1651	2.326	53.15	74.51	1.004	1.000
35	.1826	2.572	53.07	74.49	1.002	1.001
36	.2005	2.824	52.93	74.50	1.000	1.001
37	.2177	3.067	52.93	74.48	1.000	1.001
38	.2354	3.316	52.88	74.48	.999	1.001
39	.2525	3.557	52.92	74.50	.999	1.001
40	.2705	3.810	52.94	74.50	1.000	1.000
41	.2876	4.051	52.90	74.50	.999	1.001
42	.3054	4.302	52.90	74.49	.999	1.001
43	.3351	4.720	52.90	74.48	.999	1.001
44	.3655	5.148	52.86	74.49	.998	1.001
45	.3955	5.571	53.04	74.49	1.002	1.001
46	.4254	5.992	52.86	74.49	.998	1.001
47	.4556	6.417	52.98	74.47	1.001	1.002
48	.4853	6.836	52.85	74.49	.997	1.001
49	.5156	7.262	52.96	74.49	1.000	1.001
50	.5454	7.682	52.76	74.48	.996	1.002
51	.5757	8.109	52.92	74.47	.999	1.002
52	.6056	8.530	53.00	74.47	1.001	1.002
53	1.0854	15.286	52.75	74.46	.996	1.002
54	1.5654	22.048	52.76	74.46	.997	1.003
55	2.0453	28.807	52.67	74.46	.995	1.001
56	2.5251	35.565	52.47	74.45	.991	1.003
57	3.0056	42.333	52.61	74.43	.994	1.004

Table 22.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 25. GRID NO. 2

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	54.221	54.221
FREE STREAM TEMPERATURE	=	74.138	
WALL TEMPERATURE	=	103.630	
WALL HEAT FLUX	=	.04420	
FREE STREAM DENSITY	=	.07486	
FREE STREAM KINEMATIC VISCOSITY	=	.0001643	
DENSITY OF FLUID AT WALL	=	.07094	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001807	
WALL/FREE STREAM DENSITY RATIO	=	.94765	
LOCATION REYNOLDS NUMBER (REX)	=	231016.49	
INPUT VALUE OF VELOCITY DELTA	=	.10500	
INPUT VALUE OF TEMPERATURE DELTA	=	.11500	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.10500	
DISPLACEMENT THICKNESS (DELSTAR)	=	.02470	.01922
MOMENTUM THICKNESS (THETA)	=	.01088	.01096
ENERGY-DISSIPATION THICKNESS	=	.01782	.01880
ENTHALPY THICKNESS	=	.00060	.00081
SHAPE FACTOR 12 (DELSTAR/THETA)	=	2.26956	1.75358
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.63699	1.71543
MOMENTUM THICKNESS REYNOLDS NUMBER	=	299.30	301.43
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	679.28	528.58
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.31715	-.31619
CLAUSERS 'G' INTEGRAL	=	3.82957	2.12458
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02128	.01641
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01111	.01121
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.91496	1.64266

LOCATION -X- 8.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 23.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 25. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0056	.054	9.99	99.17	.184	.151
2	.0065	.062	11.89	98.53	.219	.173
3	.0082	.078	14.50	97.04	.267	.223
4	.0097	.093	16.92	96.15	.312	.253
5	.0105	.100	17.54	95.66	.323	.270
6	.0127	.121	20.87	94.05	.385	.325
7	.0148	.141	23.96	92.60	.442	.374
8	.0167	.159	25.46	90.92	.470	.431
9	.0181	.173	26.89	90.19	.496	.456
10	.0197	.188	28.42	89.54	.524	.478
11	.0217	.207	30.69	88.18	.566	.524
12	.0236	.225	32.38	87.14	.597	.559
13	.0255	.243	33.60	86.07	.620	.595
14	.0271	.258	35.34	85.33	.652	.620
15	.0335	.319	39.47	82.04	.728	.732
16	.0403	.384	43.67	79.86	.805	.805
17	.0473	.451	46.59	77.99	.859	.869
18	.0533	.508	48.55	76.81	.895	.909
19	.0605	.576	50.36	75.71	.929	.947
20	.0674	.642	51.57	75.18	.951	.965
21	.0734	.699	52.64	74.75	.971	.979
22	.0805	.767	53.26	74.74	.982	.986
23	.0873	.832	53.43	74.35	.985	.993
24	.0935	.891	53.79	74.25	.992	.996
25	.1004	.956	54.11	74.21	.998	.998
26	.1077	1.026	54.10	74.15	.998	1.000
27	.1136	1.082	54.12	74.14	.998	1.000
28	.1204	1.147	54.44	74.15	1.004	1.000
29	.1278	1.217	54.58	74.13	1.007	1.000
30	.1447	1.378	54.36	74.14	1.003	1.000
31	.1622	1.545	54.44	74.16	1.004	.999
32	.1797	1.712	54.45	74.15	1.004	1.000
33	.1977	1.883	54.50	74.16	1.005	.999
34	.2146	2.044	54.35	74.14	1.002	1.000
35	.2327	2.216	54.56	74.15	1.007	1.000
36	.2493	2.375	54.36	74.15	1.003	1.000
37	.2677	2.550	54.23	74.15	1.000	1.000
38	.2843	2.708	54.34	74.13	1.002	1.000
39	.3024	2.880	54.66	74.13	1.008	1.000
40	.3321	3.163	54.49	74.13	1.005	1.000
41	.3628	3.456	54.30	74.14	1.001	1.000
42	.3927	3.740	54.44	74.13	1.004	1.000
43	.4226	4.025	54.46	74.13	1.004	1.000
44	.4527	4.312	54.42	74.13	1.004	1.000
45	.4829	4.599	54.35	74.12	1.002	1.000
46	.5127	4.883	54.16	74.13	.999	1.000
47	.5426	5.166	54.14	74.13	.999	1.000
48	.5723	5.451	54.24	74.13	1.000	1.000
49	.6024	5.737	53.91	74.12	.994	1.000
50	1.0825	10.310	53.92	74.13	.994	1.000
51	1.5627	14.883	53.96	74.14	.995	1.000
52	2.0427	19.455	53.93	74.11	.995	1.001
53	2.5221	24.020	54.00	74.09	.996	1.002
54	3.0026	28.596	53.84	74.06	.993	1.003

Table 23.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 7. GRID NO. 2

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	54.660	54.660
FREE STREAM TEMPERATURE	=	76.052	
WALL TEMPERATURE	=	107.310	
WALL HEAT FLUX	=	.04470	
FREE STREAM DENSITY	=	.07394	
FREE STREAM KINEMATIC VISCOSITY	=	.0001673	
DENSITY OF FLUID AT WALL	=	.07013	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001837	
WALL/FREE STREAM DENSITY RATIO	=	.94840	
LOCATION REYNOLDS NUMBER (REX)	=	228749.64	
INPUT VALUE OF VELOCITY DELTA	=	.17000	
INPUT VALUE OF TEMPERATURE DELTA	=	.17000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.12000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.02610	.02022
MOMENTUM THICKNESS (THETA)	=	.01139	.01159
ENERGY-DISSIPATION THICKNESS	=	.01857	.01964
ENTHALPY THICKNESS	=	.00057	.00079
SHAPE FACTOR 12 (DELSTAR/THETA)	=	2.29172	1.74525
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.63065	1.71289
MOMENTUM THICKNESS REYNOLDS NUMBER	=	310.18	315.50
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	710.85	550.63
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.35951	-.33422
CLAUSERS 'G' INTEGRAL	=	4.11588	2.24762
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02322	.01943
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01162	.01183
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.99833	1.64207

LOCATION -X- 8.40000

Z = +6 INCHES

K = 0.2×10^{-6}

Table 24.

KLDM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 7. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0046	.039	8.75	103.56	.160	.128
2	.0074	.062	11.83	101.46	.216	.200
3	.0097	.081	15.35	99.78	.281	.257
4	.0122	.102	18.34	98.01	.336	.318
5	.0145	.121	21.31	96.85	.390	.358
6	.0173	.144	24.65	94.88	.451	.425
7	.0196	.164	26.87	93.13	.492	.485
8	.0226	.189	29.82	91.55	.545	.539
9	.0243	.203	31.31	90.69	.573	.568
10	.0272	.227	33.65	89.05	.619	.624
11	.0295	.246	35.87	88.05	.656	.658
12	.0326	.272	38.15	86.62	.698	.707
13	.0347	.289	39.43	85.80	.721	.735
14	.0373	.311	41.33	84.61	.756	.776
15	.0394	.329	42.44	84.06	.777	.795
16	.0426	.355	44.13	82.82	.807	.837
17	.0444	.370	45.07	82.45	.825	.850
18	.0477	.398	46.43	81.56	.849	.880
19	.0497	.414	47.34	81.14	.866	.894
20	.0529	.438	48.32	81.07	.884	.897
21	.0575	.479	49.86	80.06	.912	.931
22	.0625	.521	50.95	79.54	.932	.949
23	.0675	.563	51.92	78.97	.950	.969
24	.0726	.605	52.65	78.69	.963	.978
25	.0775	.646	53.09	78.57	.971	.982
26	.0825	.688	53.54	78.42	.980	.987
27	.0876	.730	53.80	78.28	.984	.992
28	.0925	.771	54.05	78.19	.989	.995
29	.0975	.813	54.19	78.15	.991	.997
30	.1025	.854	54.26	78.10	.993	.998
31	.1327	1.106	54.57	78.07	.998	.999
32	.1621	1.351	54.69	78.05	1.000	1.000
33	.1927	1.606	54.65	78.05	1.000	1.000
34	.2223	1.853	54.62	78.05	.999	1.000
35	.2525	2.104	54.71	78.06	1.001	1.000
36	.8024	6.687	54.50	78.07	.997	.999
37	1.3527	11.273	54.26	78.04	.993	1.001
38	1.9022	15.852	54.36	78.07	.995	.999
39	2.4526	20.439	54.35	78.07	.994	.999
40	3.0028	25.024	54.28	78.08	.993	.999

Table 24.

KLDM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 5. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	54.703	54.703
FREE STREAM TEMPERATURE =	78.561	
WALL TEMPERATURE =	107.740	
WALL HEAT FLUX =	.04490	
FREE STREAM DENSITY =	.07424	
FREE STREAM KINEMATIC VISCOSITY =	.0001667	
DENSITY OF FLUID AT WALL =	.07043	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001830	
WALL/FREE STREAM DENSITY RATIO =	.94858	
LOCATION REYNOLDS NUMBER (REX) =	229691.79	
INPUT VALUE OF VELOCITY DELTA =	.17000	
INPUT VALUE OF TEMPERATURE DELTA =	.17000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.10200	
DISPLACEMENT THICKNESS (DELSTAR) =	.02616	.02017
MOMENTUM THICKNESS (THETA) =	.01125	.01152
ENERGY-DISSIPATION THICKNESS =	.01830	.01969
ENTHALPY THICKNESS =	.00055	.00076
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.32439	1.74996
SHAPE FACTOR 32 (ENERGY/THETA) =	1.62650	1.70885
MOMENTUM THICKNESS REYNOLDS NUMBER =	307.71	315.13
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	715.23	551.46
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.36756	-.33522
CLAUSERS 'G' INTEGRAL =	4.21955	2.28070
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02344	.01940
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01147	.01176
SHAPE FACTOR 12 - CONSTANT DENSITY =	2.04415	1.64970
LOCATION -X-	8.40000	

Z = -6 INCHES

K = 0.2×10^{-6}

Table 25.

KLDM21X TAPE 47523- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 5. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.042	7.64	103.67	.140	.139
2	.0063	.062	9.87	102.17	.180	.191
3	.0096	.094	14.37	99.46	.263	.284
4	.0113	.111	16.72	98.25	.306	.325
5	.0141	.139	20.90	96.36	.382	.390
6	.0167	.164	23.66	94.86	.433	.441
7	.0197	.193	27.13	93.09	.496	.502
8	.0216	.212	28.61	91.82	.523	.545
9	.0245	.240	31.67	90.42	.579	.594
10	.0265	.260	33.36	89.22	.610	.635
11	.0291	.286	35.71	88.18	.653	.673
12	.0313	.307	37.02	87.02	.677	.710
13	.0345	.339	39.49	85.78	.722	.752
14	.0364	.357	40.83	84.66	.746	.784
15	.0396	.389	42.55	84.07	.778	.811
16	.0415	.407	43.57	83.57	.796	.828
17	.0446	.438	44.92	82.59	.821	.862
18	.0463	.454	45.92	82.12	.839	.878
19	.0497	.488	47.12	81.65	.861	.894
20	.0514	.504	47.87	81.31	.875	.906
21	.0549	.538	48.60	80.79	.890	.924
22	.0599	.588	50.26	80.22	.919	.943
23	.0646	.634	51.23	79.79	.936	.958
24	.0695	.682	52.13	79.52	.953	.967
25	.0743	.729	52.72	79.28	.964	.975
26	.0798	.783	53.38	79.06	.976	.983
27	.0850	.834	53.72	78.92	.982	.988
28	.0893	.876	54.02	78.84	.988	.990
29	.0944	.926	54.10	78.78	.990	.992
30	.0994	.975	54.29	78.73	.992	.994
31	.1044	1.024	54.57	78.73	.996	.994
32	.1344	1.318	54.76	78.64	1.001	.997
33	.1642	1.610	54.85	78.60	1.003	.999
34	.1943	1.905	54.61	78.58	.998	.999
35	.2245	2.201	54.70	78.55	1.000	1.000
36	.2548	2.498	54.71	78.55	1.002	1.000
37	.8048	7.890	54.65	78.54	.999	1.001
38	1.3546	13.281	54.56	78.54	.997	1.001
39	1.9041	18.668	54.45	78.56	.995	1.001
40	2.4545	24.064	54.49	78.55	.996	1.000
41	3.0043	29.454	54.44	78.50	.995	1.002

Table 25.

KLDM21X TAPE 4752R- FILES 66-85, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 24. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	55.256	55.256
FREE STREAM TEMPERATURE =	74.158	
WALL TEMPERATURE =	102.740	
WALL HEAT FLUX =	.04540	
FREE STREAM DENSITY =	.07486	
FREE STREAM KINEMATIC VISCOSITY =	.0001643	
DENSITY OF FLUID AT WALL =	.07105	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001802	
WALL/FREE STREAM DENSITY RATIO =	.94918	
LOCATION REYNOLDS NUMBER (REX) =	347510.93	
INPUT VALUE OF VELOCITY DELTA =	.17000	
INPUT VALUE OF TEMPERATURE DELTA =	.18500	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.14700	
DISPLACEMENT THICKNESS (DELSTAR) =	.03000	.02496
MOMENTUM THICKNESS (THETA) =	.01437	.01470
ENERGY-DISSIPATION THICKNESS =	.02400	.02535
ENTHALPY THICKNESS =	.00083	.00102
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.08767	1.69757
SHAPE FACTOR 32 (ENERGY/THETA) =	1.66992	1.72411
MOMENTUM THICKNESS REYNOLDS NUMBER =	402.78	411.99
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	840.88	699.38
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.45071	-.43419
CLAUSERS 'G' INTEGRAL =	4.77971	2.93936
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02701	.02393
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01465	.01500
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.84350	1.59533

LOCATION -X- 12.40000

Z = CENTERLINE

$K = 0.2 \times 10^{-6}$

Table 26.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 24. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.029	8.40	99.33	.152	.119
2	.0056	.038	9.67	98.62	.157	.144
3	.0064	.044	9.96	98.14	.181	.161
4	.0077	.053	12.60	97.44	.228	.185
5	.0063	.057	14.13	96.83	.256	.207
6	.0102	.070	16.68	95.48	.302	.254
7	.0115	.078	18.39	95.40	.333	.257
8	.0125	.085	20.04	94.75	.363	.280
9	.0145	.099	22.40	93.59	.406	.320
10	.0164	.112	24.66	92.62	.447	.354
11	.0184	.125	26.73	90.60	.484	.425
12	.0202	.138	28.40	90.12	.514	.441
13	.0214	.146	29.47	89.13	.533	.476
14	.0235	.160	30.93	88.51	.560	.498
15	.0253	.172	32.47	87.75	.588	.523
16	.0274	.187	33.66	86.56	.613	.565
17	.0292	.199	34.87	85.97	.631	.587
18	.0355	.242	38.70	83.87	.700	.660
19	.0425	.289	42.01	81.36	.760	.748
20	.0497	.338	44.75	79.95	.810	.798
21	.0554	.377	46.76	78.78	.846	.838
22	.0626	.426	48.42	77.55	.876	.881
23	.0696	.474	49.84	77.04	.902	.899
24	.0754	.513	50.95	76.55	.922	.916
25	.0825	.561	51.95	75.96	.940	.937
26	.0893	.608	52.64	75.51	.953	.953
27	.0955	.650	53.12	75.13	.961	.964
28	.1024	.697	53.46	74.91	.968	.974
29	.1093	.744	53.93	74.80	.976	.977
30	.1154	.785	54.25	74.78	.981	.978
31	.1227	.835	54.46	74.64	.986	.983
32	.1295	.881	54.60	74.40	.988	.992
33	.1403	.955	54.97	74.38	.995	.992
34	.1642	1.117	55.16	74.28	.998	.996
35	.1813	1.234	55.18	74.17	.999	.999
36	.1994	1.357	55.28	74.18	1.000	.999
37	.2163	1.472	55.30	74.16	1.001	1.000
38	.2344	1.595	55.21	74.13	.999	1.001
39	.2514	1.710	55.42	74.16	1.003	1.000
40	.2693	1.832	55.25	74.15	1.000	1.000
41	.2864	1.949	55.36	74.15	1.002	1.000
42	.3044	2.071	55.37	74.15	1.002	1.000
43	.3342	2.274	55.31	74.14	1.001	1.001
44	.3647	2.481	55.24	74.15	1.000	1.000
45	.3944	2.683	55.36	74.14	1.002	1.001
46	.4245	2.888	55.39	74.14	1.002	1.000
47	.4545	3.092	55.34	74.13	1.002	1.001
48	.4848	3.298	55.25	74.13	1.000	1.001
49	.5146	3.501	55.31	74.14	1.001	1.001
50	.5445	3.704	55.31	74.12	1.001	1.001
51	.5744	3.908	55.21	74.13	.999	1.001
52	.6046	4.113	55.35	74.14	1.002	1.001
53	1.0845	7.376	55.20	74.15	.999	1.000
54	1.5646	10.644	55.12	74.13	.998	1.001
55	2.0445	13.908	55.10	74.14	.997	1.001
56	2.5242	17.172	54.95	74.15	.994	1.000
57	3.0046	20.440	54.91	74.15	.994	1.000

Table 26.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 9. GRID NO. 2

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	56.366	56.366
FREE STREAM TEMPERATURE	=	76.315	
WALL TEMPERATURE	=	100.920	
WALL HEAT FLUX	=	.04590	
FREE STREAM DENSITY	=	.07391	
FREE STREAM KINEMATIC VISCOSITY	=	.0001674	
DENSITY OF FLUID AT WALL	=	.07093	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001800	
WALL/FREE STREAM DENSITY RATIO	=	.95968	
LOCATION REYNOLDS NUMBER (REX)	=	460146.57	
INPUT VALUE OF VELOCITY DELTA	=	.21000	
INPUT VALUE OF TEMPERATURE DELTA	=	.21000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.19500	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03634	.03083
MOMENTUM THICKNESS (THETA)	=	.01851	.01925
ENERGY-DISSIPATION THICKNESS	=	.03163	.03358
ENTHALPY THICKNESS	=	.00093	.00110
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.96262	1.60150
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.70873	1.74452
MOMENTUM THICKNESS REYNOLDS NUMBER	=	519.40	540.11
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1019.50	864.98
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.55717	-.55081
CLAUSERS 'G' INTEGRAL	=	5.70875	3.49754
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.03274	.02973
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01877	.01954
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.74384	1.52137

LOCATION -X- 16.40000

Z = CENTERLINE

$K = 0.2 \times 10^{-6}$

Table 27.

KLDM21X TAPE 47529- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 9. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.027	9.04	97.41	.160	.155
2	.0103	.053	11.32	95.30	.201	.248
3	.0156	.080	23.43	92.91	.416	.354
4	.0205	.105	29.09	91.44	.516	.420
5	.0254	.130	32.51	89.56	.577	.503
6	.0304	.156	35.57	88.21	.631	.562
7	.0356	.183	38.46	87.04	.681	.614
8	.0406	.208	40.39	86.44	.717	.641
9	.0454	.233	41.99	85.66	.745	.675
10	.0504	.259	43.74	85.00	.776	.704
11	.0554	.284	44.92	84.04	.797	.747
12	.0603	.309	46.12	83.20	.818	.784
13	.0654	.336	47.00	83.04	.834	.791
14	.0704	.361	46.12	82.48	.654	.817
15	.0753	.386	48.93	81.97	.866	.838
16	.0803	.412	49.44	81.83	.878	.844
17	.0855	.439	50.17	81.26	.890	.870
18	.0904	.464	50.76	81.00	.901	.881
19	.0955	.490	51.52	80.47	.914	.905
20	.1005	.516	51.96	80.24	.922	.915
21	.1056	.542	52.40	80.25	.930	.914
22	.1123	.576	52.80	80.03	.937	.924
23	.1206	.619	53.44	79.88	.948	.931
24	.1277	.655	53.74	79.82	.953	.933
25	.1355	.695	54.33	79.51	.964	.947
26	.1425	.731	54.76	79.08	.971	.966
27	.1502	.770	54.67	78.97	.970	.971
28	.1576	.808	55.08	78.96	.977	.971
29	.1651	.847	55.39	78.74	.983	.981
30	.1726	.885	55.53	78.73	.985	.982
31	.1807	.927	55.72	78.67	.989	.984
32	.1875	.962	55.90	78.67	.992	.989
33	.1956	1.003	56.12	78.52	.996	.991
34	.2026	1.039	56.29	78.50	.999	.992
35	.2101	1.078	56.36	78.37	.999	.997
36	.2177	1.117	56.36	78.32	1.000	1.000
37	.2256	1.157	56.44	78.25	1.001	1.003
38	.2323	1.191	56.64	78.20	1.005	1.005
39	.2406	1.234	56.47	78.21	1.002	1.005
40	.2473	1.268	56.63	78.20	1.005	1.005
41	.2555	1.310	56.76	78.12	1.007	1.009
42	.3254	1.669	56.65	78.06	1.005	1.010
43	.3951	2.026	56.91	78.07	1.006	1.011
44	.4654	2.387	56.72	78.06	1.006	1.011
45	.5357	2.747	56.82	78.05	1.008	1.012
46	.6055	3.105	56.77	78.03	1.007	1.012
47	1.0657	5.466	56.76	78.04	1.007	1.012
48	1.5655	8.028	56.67	78.03	1.005	1.013
49	2.0455	10.490	56.56	78.02	1.004	1.013
50	2.5252	12.950	56.55	78.02	1.003	1.013
51	3.0055	15.413	56.50	78.04	1.002	1.012

Table 27.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 10. GRID NO. 2

BOUNDARY LAYER PPOPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	56.477	56.477
FREE STREAM TEMPERATURE	=	78.495	
WALL TEMPERATURE	=	101.500	
WALL HEAT FLUX	=	.04690	
FREE STREAM DENSITY	=	.07388	
FREE STPEAM KINEMATIC VISCOSITY	=	.0001675	
DENSITY OF FLUID AT WALL	=	.07085	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001804	
WALL/FREE STREAM DENSITY RATIO	=	.95901	
LOCATION REYNOLDS NUMBER (REX)	=	460782.69	
INPUT VALUE OF VELOCITY DELTA	=	.21000	
INPUT VALUE OF TEMPERATURE DELTA	=	.21000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.20000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03440	.02993
MOMENTUM THICKNESS (THETA)	=	.01839	.01876
ENERGY-DISSIPATION THICKNESS	=	.03155	.03263
ENTHALPY THICKNESS	=	.00098	.00111
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.87059	1.59533
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.71568	1.75006
MOMENTUM THICKNESS REYNOLDS NUMBER	=	516.74	527.04
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	966.62	840.80
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.51939	-.53263
CLAUSERS 'G' INTEGRAL	=	5.04505	3.33698
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.03076	.02881
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01866	.01905
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.64832	1.51270

LOCATION -X- 16.40000

Z = +6 INCHES

K = 0.2×10^{-6}

Table 28.

KLDM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 10. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.027	10.43	98.68	.185	.123
2	.0104	.052	17.78	95.37	.315	.266
3	.0156	.079	26.30	92.90	.466	.374
4	.0207	.104	30.92	91.35	.547	.441
5	.0257	.129	34.22	89.83	.606	.507
6	.0304	.152	36.92	88.62	.654	.560
7	.0355	.178	39.45	88.05	.696	.585
8	.0407	.204	41.26	86.87	.731	.636
9	.0456	.228	43.09	85.99	.763	.674
10	.0505	.253	44.08	85.08	.781	.714
11	.0556	.278	45.43	84.50	.804	.739
12	.0607	.304	46.73	83.54	.828	.781
13	.0657	.329	47.64	83.06	.847	.802
14	.0704	.352	48.29	82.78	.855	.814
15	.0757	.379	49.43	82.21	.875	.838
16	.0807	.404	50.10	81.64	.887	.863
17	.0855	.428	50.65	81.01	.897	.891
18	.0905	.453	51.12	81.03	.905	.888
19	.0957	.479	51.72	81.06	.916	.888
20	.1006	.503	52.25	80.60	.925	.909
21	.1056	.528	52.77	80.43	.934	.916
22	.1126	.563	53.16	80.19	.941	.926
23	.1205	.603	53.80	79.87	.953	.940
24	.1277	.639	54.08	79.68	.958	.949
25	.1356	.678	54.42	79.46	.964	.961
26	.1425	.713	54.71	79.38	.969	.961
27	.1502	.751	54.96	79.16	.973	.971
28	.1574	.787	55.30	79.17	.979	.971
29	.1651	.826	55.65	79.04	.985	.976
30	.1726	.863	55.70	78.84	.986	.985
31	.1803	.902	55.95	78.77	.991	.988
32	.1876	.938	55.93	78.62	.990	.995
33	.1953	.977	56.05	78.51	.992	.999
34	.2023	1.012	56.16	78.52	.994	.999
35	.2101	1.051	56.46	78.54	1.000	.998
36	.2174	1.087	56.36	78.54	.998	.998
37	.2256	1.128	56.59	78.41	1.002	1.004
38	.2324	1.162	56.65	78.31	1.003	1.008
39	.2404	1.202	56.54	78.27	1.001	1.010
40	.2474	1.237	56.67	78.28	1.003	1.009
41	.2555	1.278	56.72	78.23	1.004	1.011
42	.3254	1.627	56.24	78.09	1.006	1.017
43	.3952	1.976	56.53	78.10	1.006	1.017
44	.4653	2.327	56.89	78.10	1.007	1.017
45	.5356	2.678	56.97	78.09	1.007	1.018
46	.6057	3.029	56.94	78.09	1.006	1.018
47	1.0858	5.429	56.93	78.11	1.006	1.017
48	1.5657	7.829	56.77	78.11	1.005	1.017
49	2.0455	10.226	56.76	78.11	1.004	1.017
50	2.5252	12.626	56.57	78.10	1.002	1.017
51	3.0056	15.028	56.59	78.10	1.002	1.017

Table 28.

KLDM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 11. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	58.458	58.458
FREE STREAM TEMPERATURE =	78.287	
WALL TEMPERATURE =	97.170	
WALL HEAT FLUX =	.04730	
FREE STREAM DENSITY =	.07391	
FREE STREAM KINEMATIC VISCOSITY =	.0001674	
DENSITY OF FLUID AT WALL =	.07141	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001779	
WALL/FREE STREAM DENSITY RATIO =	.96609	
LOCATION REYNOLDS NUMBER (REX) =	593676.37	
INPUT VALUE OF VELOCITY DELTA =	.37000	
INPUT VALUE OF TEMPERATURE DELTA =	.37000	
CALCULATED DELTA =		.36790
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03958	.03824
MOMENTUM THICKNESS (THETA) =	.02533	.02544
ENERGY-DISSIPATION THICKNESS =	.04495	.04529
ENTHALPY THICKNESS =	.00144	.00148
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.56241	1.50325
SHAPE FACTOR 32 (ENERGY/THETA) =	1.77452	1.78073
MOMENTUM THICKNESS REYNOLDS NUMBER =	737.24	740.23
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1151.87	1112.75
SKIN FRICTION COEFFICIENT =	.005100	
FRICTION VELOCITY =	3.00344	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.07052
CLAUSERS 'DELTA' INTEGRAL =	-.65803	-.71550
CLAUSERS 'G' INTEGRAL =	4.73858	4.17637
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03597	.03676
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02563	.02574
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.40357	1.42835

LOCATION -X- 20.40000

Z = CENTERLINE

K = 0.2 x 10^{-6}

Table 29.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 11. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0043	.014	15.26	94.41	.261	.146	-14.363	5.080	3.001	6.091
2	.0105	.034	26.12	91.13	.481	.320	-10.100	9.364	6.570	14.814
3	.0165	.054	34.39	89.39	.588	.412	-8.013	11.451	8.468	23.255
4	.0222	.072	37.57	88.30	.643	.470	-6.955	12.506	9.649	31.273
5	.0283	.092	39.84	87.26	.681	.525	-6.200	13.263	10.788	39.855
6	.0344	.112	41.62	86.69	.712	.555	-5.608	13.856	11.400	46.436
7	.0403	.131	42.96	86.09	.735	.587	-5.160	14.304	12.052	56.737
8	.0466	.152	44.54	85.35	.762	.626	-4.635	14.826	12.863	66.021
9	.0525	.171	45.50	84.92	.778	.649	-4.316	15.148	13.327	73.900
10	.0586	.190	46.46	84.68	.794	.661	-4.016	15.446	13.592	82.481
11	.0645	.210	47.32	84.32	.809	.681	-3.709	15.754	13.964	90.761
12	.0734	.238	48.06	83.56	.822	.721	-3.460	16.003	14.811	103.302
13	.0826	.268	49.36	83.12	.844	.744	-3.030	16.433	15.266	116.244
14	.0915	.297	50.19	82.58	.859	.773	-2.753	16.711	15.675	126.765
15	.1006	.327	51.17	82.06	.875	.800	-2.428	17.036	16.438	141.567
16	.1097	.356	51.80	81.67	.886	.821	-2.216	17.246	16.864	154.369
17	.1162	.384	52.69	81.59	.901	.825	-1.919	17.544	16.952	166.327
18	.1271	.413	53.07	81.39	.908	.835	-1.793	17.671	17.166	176.847
19	.1362	.442	53.69	80.99	.916	.857	-1.587	17.877	17.605	191.649
20	.1452	.472	54.26	80.57	.928	.879	-1.398	18.065	18.064	204.311
21	.1541	.501	54.71	80.40	.936	.898	-1.247	18.217	18.244	216.931
22	.1642	.533	55.16	80.15	.944	.901	-1.097	18.367	18.524	231.040
23	.1742	.566	55.68	80.00	.952	.909	-.926	18.538	18.685	245.108
24	.1842	.598	56.03	79.67	.959	.927	-.807	18.656	19.041	259.176
25	.1941	.631	56.21	79.55	.962	.933	-.749	18.715	19.173	273.104
26	.2047	.665	56.59	79.34	.968	.944	-.620	18.843	19.406	288.016
27	.2141	.695	56.95	79.22	.974	.951	-.502	18.962	19.550	301.240
28	.2242	.726	57.15	79.13	.976	.955	-.435	19.028	19.626	315.448
29	.2346	.763	57.45	79.09	.983	.958	-.336	19.127	19.675	330.361
30	.2445	.794	57.65	78.96	.986	.964	-.269	19.194	19.815	344.007
31	.2545	.827	57.66	79.00	.987	.962	-.257	19.206	19.771	358.075
32	.2792	.907	57.94	78.63	.991	.982	-.171	19.293	20.175	392.823
33	.3041	.988	58.24	78.48	.996	.990	-.073	19.390	20.336	427.852
34	.3294	1.070	58.36	78.47	.998	.990	-.033	19.430	20.353	463.445
35	.3546	1.152	58.36	78.34	.998	.997	-.033	19.430	20.493	498.896
36	.3795	1.233	58.40	78.28	.999	1.000	-.019	19.445	20.555	533.926
37	.4041	1.313	58.53	78.30	1.001	.999	.025	19.488	20.533	568.533
38	.4293	1.394	58.44	78.28	1.000	1.000	-.006	19.457	20.557	603.985
39	.4545	1.476	58.39	78.27	.999	1.001	-.022	19.442	20.562	639.436
40	.4796	1.558	58.38	78.27	.999	1.001	-.025	19.439	20.562	674.747
41	.5044	1.638	58.46	78.27	.999	1.001	-.018	19.445	20.568	709.636
42	.6043	1.963	58.44	78.28	1.000	1.000	-.007	19.456	20.556	850.176
43	.7044	2.288	58.46	78.26	1.000	1.001	.002	19.466	20.574	990.997
44	.8045	2.613	58.48	78.27	1.000	1.001	.008	19.471	20.562	1131.819
45	.9045	2.938	58.50	78.27	1.001	1.001	.013	19.476	20.568	1272.500
46	1.0044	3.262	58.46	78.26	1.000	1.001	.007	19.471	20.574	1413.040
47	1.6707	5.426	58.26	78.27	.997	1.001	-.066	19.398	20.568	2350.395
48	2.3373	7.591	58.22	78.26	.996	1.000	-.078	19.386	20.556	3288.173
49	3.0047	9.759	58.16	78.26	.995	1.002	-.101	19.363	20.580	4227.076

Table 29.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 12. GRID NO. 2

BOUNDARY LAYER PPOPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	58.768	58.768
FREE STREAM TEMPERATURE =	77.652	
WALL TEMPERATURE =	96.160	
WALL HEAT FLUX =	.04660	
FREE STREAM DENSITY =	.07308	
FREE STREAM KINEMATIC VISCOSITY =	.0001678	
DENSITY OF FLUID AT WALL =	.07123	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001781	
WALL/FREE STREAM DENSITY RATIO =	.96670	
LOCATION REYNOLDS NUMBER (REX) =	595661.68	
INPUT VALUE OF VELOCITY DELTA =	.38000	
INPUT VALUE OF TEMPERATURE DELTA =	.38000	
CALCULATED DELTA =		.29432
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03805	.03648
MOMENTUM THICKNESS (THETA) =	.02407	.02417
ENERGY-DISSIPATION THICKNESS =	.04266	.04303
ENTHALPY THICKNESS =	.00142	.00146
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.58103	1.50952
SHAPE FACTOR 32 (ENERGY/THETA) =	1.77260	1.78078
MOMENTUM THICKNESS REYNOLDS NUMBER =	702.71	705.65
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1111.01	1065.20
SKIN FRICTION COEFFICIENT =	.005175	
FRICTION VELOCITY =	3.04152	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.08141
CLAUSERS 'DELTA' INTEGRAL =	-.62431	-.67687
CLAUSERS 'G' INTEGRAL =	4.58830	3.94613
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03447	.03502
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02435	.02446
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.41550	1.43190

LOCATION -X- 20.40000

Z = +6 INCHES

K = 0.2 x 10^{-6}

Table 30.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 12. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0043	.015	14.70	89.63	.250	.353	-14.495	4.833	7.260	6.162
2	.0103	.035	28.10	91.65	.478	.244	-10.090	9.238	5.011	14.700
3	.0169	.058	34.44	88.97	.586	.389	-8.004	11.324	7.989	24.092
4	.0222	.076	37.80	87.84	.643	.450	-6.902	12.427	9.243	31.634
5	.0285	.097	40.47	86.58	.688	.518	-6.022	13.306	10.646	40.599
6	.0347	.118	42.32	85.95	.720	.552	-5.413	13.915	11.342	49.421
7	.0403	.137	43.82	85.35	.740	.584	-5.021	14.307	12.006	57.390
8	.0465	.158	44.96	84.76	.765	.616	-4.548	14.780	12.668	66.213
9	.0525	.178	46.25	84.33	.787	.639	-4.122	15.207	13.145	74.751
10	.0587	.200	47.14	83.76	.802	.670	-3.830	15.498	13.774	83.574
11	.0647	.220	47.94	83.27	.815	.696	-3.567	15.761	14.316	92.112
12	.0734	.249	49.02	82.64	.834	.731	-3.210	16.116	15.022	104.492
13	.0824	.280	50.25	82.26	.855	.750	-2.797	16.531	15.417	117.299
14	.0915	.311	51.07	82.01	.869	.765	-2.537	16.792	15.725	130.249
15	.1005	.342	51.96	81.46	.884	.794	-2.246	17.082	16.334	143.056
16	.1094	.372	52.58	81.01	.894	.819	-2.041	17.287	16.835	155.721
17	.1181	.401	53.03	80.57	.902	.842	-1.894	17.434	17.322	168.101
18	.1272	.432	53.84	80.39	.916	.854	-1.626	17.702	17.567	181.050
19	.1362	.463	54.52	80.25	.927	.860	-1.403	17.925	17.673	193.857
20	.1452	.493	55.03	80.07	.936	.869	-1.236	18.093	17.878	206.665
21	.1542	.524	55.41	79.66	.942	.891	-1.112	18.216	18.329	219.472
22	.1641	.556	55.84	79.51	.950	.899	-.970	18.356	18.492	233.560
23	.1741	.592	56.26	79.34	.957	.909	-.826	18.503	18.691	247.790
24	.1842	.626	56.61	79.10	.963	.922	-.716	18.613	18.956	262.162
25	.1942	.660	57.01	79.03	.970	.925	-.584	18.744	19.027	276.392
26	.2044	.695	57.32	78.75	.975	.940	-.484	18.844	19.336	290.907
27	.2142	.728	57.50	78.60	.978	.949	-.423	18.905	19.504	304.853
28	.2242	.762	57.66	78.41	.981	.959	-.369	18.959	19.718	319.063
29	.2346	.797	57.75	78.32	.982	.964	-.341	18.987	19.816	333.882
30	.2446	.831	58.05	78.24	.987	.968	-.243	19.085	19.913	348.112
31	.2547	.865	58.24	78.14	.991	.974	-.180	19.149	20.017	362.485
32	.2792	.949	58.38	77.97	.993	.983	-.134	19.194	20.205	397.349
33	.3042	1.034	58.56	77.87	.997	.988	-.067	19.262	20.323	432.924
34	.3296	1.120	58.79	77.80	1.000	.992	-.001	19.326	20.398	469.069
35	.3549	1.206	58.76	77.77	1.000	.994	-.002	19.327	20.430	505.071
36	.3793	1.289	58.82	77.67	1.001	.999	.010	19.336	20.541	539.792
37	.4041	1.373	58.87	77.67	1.001	.999	.027	19.355	20.542	575.083
38	.4293	1.459	58.69	77.64	.998	1.001	-.033	19.295	20.576	610.943
39	.4549	1.546	58.81	77.65	1.000	1.000	.006	19.335	20.566	647.372
40	.4795	1.629	58.84	77.66	1.001	.999	.018	19.346	20.551	682.379
41	.5045	1.714	58.78	77.64	1.000	1.000	-.003	19.326	20.570	717.954
42	.6046	2.054	58.84	77.64	1.001	1.001	.017	19.346	20.575	860.398
43	.7043	2.393	58.69	77.64	.998	1.001	-.031	19.297	20.575	1002.272
44	.8046	2.734	58.69	77.64	.998	1.001	-.031	19.297	20.574	1145.001
45	.9043	3.073	58.75	77.66	.999	.999	-.012	19.316	20.550	1286.876
46	1.0043	3.412	58.62	77.66	.997	.999	-.056	19.273	20.550	1429.177
47	1.6704	5.676	58.66	77.65	.998	1.000	-.041	19.287	20.569	2377.048
48	2.3374	7.942	58.45	77.66	.994	.999	-.110	19.219	20.550	3326.199
49	3.0045	10.208	58.46	77.64	.995	1.001	-.106	19.222	20.575	4275.493

Table 30.

KLDM21X TAPE 4752R- FILES 66-8E, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 13. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	58.802	58.802
FREE STREAM TEMPERATURE =	77.665	
WALL TEMPERATURE =	95.710	
WALL HEAT FLUX =	.04630	
FREE STREAM DENSITY =	.07368	
FREE STREAM KINEMATIC VISCOSITY =	.0001678	
DENSITY OF FLUID AT WALL =	.07128	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001779	
WALL/FREE STREAM DENSITY RATIO =	.96751	
LOCATION REYNOLDS NUMBER (REX) =	595803.42	
INPUT VALUE OF VELOCITY DELTA =	.37000	
INPUT VALUE OF TEMPERATURE DELTA =	.37000	
CALCULATED DELTA =		.29952
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03916	.03705
MOMENTUM THICKNESS (THETA) =	.02449	.02458
ENERGY-DISSIPATION THICKNESS =	.04322	.04372
ENTHALPY THICKNESS =	.00134	.00139
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.59900	1.50723
SHAPE FACTOR 32 (ENERGY/THETA) =	1.76517	1.77844
MOMENTUM THICKNESS REYNOLDS NUMBER =	715.18	718.02
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1143.57	1082.21
SKIN FRICTION COEFFICIENT =	.005154	
FRICTION VELOCITY =	3.03460	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.07974
CLAUSERS 'DELTA' INTEGRAL =	-.64867	-.69113
CLAUSERS 'G' INTEGRAL =	4.90015	4.05491
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03565	.03567
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02477	.02487
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.43954	1.43427

LOCATION -X- 20.40000

Z = -6 INCHES

K = 0.2 X 10^{-6}

Table 31.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 13. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0043	.014	15.74	92.51	.256	.177	-14.421	4.956	3.585	6.156
2	.0106	.035	24.76	90.11	.420	.310	-11.237	8.140	6.275	15.114
3	.0165	.055	32.87	88.36	.559	.408	-6.545	10.832	8.246	23.502
4	.0222	.074	37.15	87.18	.632	.472	-7.137	12.241	9.560	31.607
5	.0286	.096	39.87	86.45	.678	.513	-6.238	13.140	10.381	40.706
6	.0344	.115	41.81	85.51	.711	.565	-5.600	13.777	11.435	48.953
7	.0406	.136	43.36	84.91	.738	.598	-5.063	14.294	12.105	57.768
8	.0464	.155	44.61	84.63	.759	.614	-4.676	14.701	12.425	66.014
9	.0523	.175	45.81	84.11	.779	.643	-4.280	15.097	13.002	74.403
10	.0585	.195	46.71	83.59	.794	.671	-3.963	15.394	13.586	83.218
11	.0644	.215	47.48	83.22	.808	.692	-3.730	15.647	14.000	91.607
12	.0733	.245	48.80	82.68	.830	.722	-3.296	16.080	14.612	104.261
13	.0829	.277	49.84	82.27	.846	.745	-2.953	16.425	15.072	117.910
14	.0917	.306	50.94	81.74	.866	.774	-2.591	16.786	15.662	130.422
15	.1006	.336	51.95	81.37	.884	.795	-2.257	17.121	16.078	143.076
16	.1094	.365	52.80	81.04	.895	.813	-2.043	17.334	16.445	155.588
17	.1161	.394	52.92	80.48	.900	.844	-1.939	17.438	17.076	167.958
18	.1272	.425	53.71	80.34	.913	.852	-1.679	17.696	17.232	180.896
19	.1361	.454	54.18	80.27	.921	.856	-1.524	17.853	17.311	193.551
20	.1452	.485	54.96	79.81	.935	.881	-1.265	18.112	17.629	206.489
21	.1541	.515	55.48	79.52	.943	.897	-1.095	18.282	18.156	219.143
22	.1642	.546	55.78	79.42	.949	.903	-.996	18.381	18.265	233.503
23	.1742	.582	56.21	79.23	.956	.913	-.853	18.524	18.479	247.721
24	.1841	.615	56.64	79.06	.963	.923	-.713	18.664	18.670	261.797
25	.1942	.648	57.01	78.79	.970	.937	-.591	18.787	18.968	276.158
26	.2045	.683	57.30	78.57	.974	.950	-.496	18.882	19.215	290.802
27	.2142	.715	57.40	78.50	.976	.953	-.462	18.915	19.292	304.594
28	.2241	.748	57.72	78.41	.982	.959	-.358	19.019	19.396	318.670
29	.2343	.782	57.84	78.32	.984	.964	-.317	19.060	19.497	333.172
30	.2445	.816	58.14	78.28	.989	.966	-.220	19.156	19.544	347.674
31	.2545	.850	58.24	78.18	.990	.972	-.186	19.191	19.658	361.893
32	.2792	.932	58.45	78.01	.994	.981	-.116	19.261	19.850	397.011
33	.3042	1.016	58.59	77.85	.996	.990	-.071	19.306	20.027	432.556
34	.3297	1.101	58.67	77.73	.998	.996	-.042	19.335	20.158	468.812
35	.3544	1.183	58.73	77.67	.999	1.000	-.024	19.353	20.230	503.931
36	.3794	1.267	58.84	77.65	1.001	1.001	.012	19.389	20.249	539.476
37	.4042	1.350	58.81	77.66	1.000	1.000	.003	19.381	20.234	574.737
38	.4294	1.434	58.76	77.68	.999	.999	-.015	19.362	20.218	610.567
39	.4546	1.518	58.67	77.66	.998	.999	-.043	19.334	20.217	646.396
40	.4795	1.601	58.80	77.68	1.000	.999	.000	19.378	20.213	681.799
41	.5044	1.684	58.82	77.67	1.000	1.000	.006	19.383	20.226	717.202
42	.6044	2.018	58.80	77.66	1.000	1.000	-.002	19.375	20.237	859.383
43	.7044	2.352	58.76	77.67	.999	1.000	-.014	19.363	20.231	1001.563
44	.8044	2.686	58.73	77.66	.999	1.000	-.023	19.354	20.237	1143.744
45	.9044	3.020	58.81	77.65	1.000	1.001	.003	19.380	20.249	1285.925
46	1.0046	3.354	58.69	77.67	.998	1.000	-.038	19.339	20.224	1428.390
47	1.6704	5.577	58.53	77.62	.995	1.002	-.090	19.287	20.281	2375.029
48	2.3374	7.804	59.54	77.63	.995	1.002	-.066	19.289	20.275	3323.374
49	3.0046	10.031	58.52	77.59	.995	1.004	-.092	19.285	20.312	4272.004

Table 31.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 14. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	60.259	60.259
FREE STREAM TEMPERATURE =	77.395	
WALL TEMPERATURE =	95.410	
WALL HEAT FLUX =	.04760	
FREE STREAM DENSITY =	.07371	
FREE STREAM KINEMATIC VISCOSITY =	.0001676	
DENSITY OF FLUID AT WALL =	.07132	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001777	
WALL/FREE STREAM DENSITY RATIO =	.96755	
LOCATION REYNOLDS NUMBER (REX) =	730931.25	
INPUT VALUE OF VELOCITY DELTA =	.47000	
INPUT VALUE OF TEMPERATURE DELTA =	.47000	
CALCULATED DELTA =		.34628
DELTA 99.5% INPUT =	.36500	
DISPLACEMENT THICKNESS (DELSTAR) =	.04712	.04684
MOMENTUM THICKNESS (THETA) =	.03165	.03174
ENERGY-DISSIPATION THICKNESS =	.05646	.05662
ENTHALPY THICKNESS =	.00167	.00168
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.48879	1.47567
SHAPE FACTOR 32 (ENERGY/THETA) =	1.78404	1.78346
MOMENTUM THICKNESS REYNOLDS NUMBER =	948.01	950.95
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1411.40	1403.29
SKIN FRICTION COEFFICIENT =	.004636	
FRICTION VELOCITY =	2.94936	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.07755
CLAUSERS 'DELTA' INTEGRAL =	-.85028	-.92285
CLAUSERS 'G' INTEGRAL =	5.62503	5.46668
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.04353	.04517
MOMENTUM THICKNESS - CONSTANT DENSITY =	.03197	.03207
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.36158	1.40832

LOCATION -X- 24.40000

Z = CENTERLINE

K = 0.2 X 10^{-6}

Table 32.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 14. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0038	.010	15.33	92.13	.254	.182	-15.234	5.197	3.484	5.298
2	.0051	.014	17.44	91.08	.289	.240	-14.516	5.915	4.588	7.096
3	.0068	.018	19.76	90.64	.321	.265	-13.866	6.565	5.060	6.064
4	.0070	.019	22.94	90.09	.381	.295	-12.653	7.776	5.638	9.724
5	.0078	.021	25.04	89.63	.415	.321	-11.942	8.489	6.126	10.830
6	.0096	.026	29.07	88.94	.482	.359	-10.574	9.857	6.857	13.320
7	.0110	.030	30.76	88.47	.510	.385	-10.003	10.428	7.366	15.257
8	.0118	.032	31.86	88.20	.529	.400	-9.628	10.803	7.650	16.363
9	.0140	.038	34.25	87.53	.568	.437	-8.817	11.614	8.352	19.406
10	.0156	.043	35.59	87.13	.591	.459	-8.364	12.067	8.779	21.896
11	.0179	.049	36.87	86.66	.612	.486	-7.931	12.500	9.277	24.801
12	.0197	.054	38.05	86.43	.631	.499	-7.538	12.894	9.529	27.290
13	.0212	.058	38.67	86.16	.642	.514	-7.321	13.110	9.812	29.365
14	.0232	.064	39.28	85.92	.652	.527	-7.113	13.318	10.070	32.131
15	.0246	.068	39.92	85.83	.662	.532	-6.897	13.534	10.163	34.483
16	.0272	.075	40.67	85.65	.675	.542	-6.640	13.791	10.349	37.664
17	.0287	.079	40.98	85.52	.680	.549	-6.537	13.894	10.490	39.739
18	.0350	.096	42.36	84.85	.703	.586	-6.061	14.370	11.202	48.453
19	.0420	.115	43.71	84.30	.725	.617	-5.609	14.822	11.786	58.135
20	.0489	.134	45.08	84.04	.748	.631	-5.146	15.285	12.055	67.679
21	.0548	.150	45.88	83.69	.761	.651	-4.875	15.556	12.435	75.840
22	.0620	.170	46.59	83.33	.773	.671	-4.633	15.798	12.817	85.799
23	.0688	.189	47.38	83.04	.786	.687	-4.367	16.064	13.119	95.205
24	.0750	.206	48.10	82.87	.798	.696	-4.123	16.308	13.304	103.780
25	.0822	.225	48.79	82.64	.810	.709	-3.869	16.542	13.548	113.739
26	.0868	.243	49.46	82.19	.821	.734	-3.663	16.766	14.021	122.868
27	.0949	.260	50.15	82.17	.832	.735	-3.428	17.003	14.046	131.306
28	.1018	.279	50.63	82.20	.840	.733	-3.266	17.165	14.014	140.850
29	.1068	.298	51.19	81.76	.849	.758	-3.076	17.355	14.477	150.532
30	.1149	.315	51.67	81.59	.858	.767	-2.911	17.521	14.662	158.970
31	.1223	.335	52.08	81.43	.864	.776	-2.775	17.656	14.831	169.205
32	.1293	.354	52.66	81.26	.874	.785	-2.576	17.855	15.007	176.888
33	.1460	.400	53.87	80.54	.894	.825	-2.166	18.265	15.770	201.987
34	.1637	.449	54.99	80.15	.913	.847	-1.766	18.646	16.189	226.469
35	.1812	.497	55.69	79.85	.924	.864	-1.550	18.882	16.503	250.675
36	.1969	.545	56.61	79.50	.939	.883	-1.239	19.192	16.872	275.157
37	.2163	.593	57.21	78.98	.949	.912	-1.032	19.399	17.427	299.225
38	.2342	.642	57.86	78.76	.960	.924	-.808	19.623	17.661	323.984
39	.2509	.687	58.44	78.68	.970	.929	-.617	19.814	17.744	347.083
40	.2691	.737	58.78	78.36	.975	.946	-.502	19.929	18.082	372.257
41	.2859	.783	59.19	78.12	.982	.960	-.364	20.067	18.339	395.495
42	.3040	.833	59.48	77.87	.987	.974	-.263	20.168	18.602	420.530
43	.3237	.914	59.69	77.75	.991	.980	-.191	20.240	18.734	461.611
44	.3643	.998	59.96	77.64	.995	.987	-.102	20.329	18.850	503.936
45	.3943	1.080	60.08	77.51	.997	.994	-.061	20.370	18.990	545.432
46	.4242	1.162	60.09	77.42	.997	.999	-.057	20.374	19.083	586.769
47	.4536	1.243	60.27	77.40	1.000	1.000	.004	20.435	19.103	627.732
48	.4839	1.326	60.24	77.39	1.000	1.000	-.007	20.424	19.113	669.365
49	.5142	1.409	60.24	77.40	1.000	1.000	-.006	20.425	19.102	711.276
50	.5438	1.490	60.30	77.40	1.001	1.000	.014	20.445	19.106	752.218
51	.5738	1.572	60.33	77.41	1.000	.999	-.009	20.422	19.090	793.714
52	.6039	1.655	60.22	77.40	.999	1.000	-.013	20.416	19.103	835.348
53	.6443	2.313	60.29	77.40	1.001	1.000	.010	20.441	19.102	1167.866
54	1.0839	2.976	60.27	77.39	1.000	1.000	.003	20.434	19.108	1499.277
55	1.5243	3.628	60.22	77.39	.999	1.000	-.012	20.419	19.113	1831.795
56	1.5641	4.285	60.15	77.40	.998	1.000	-.036	20.395	19.102	2163.484
57	1.8044	4.944	60.16	77.39	.998	1.000	-.032	20.399	19.108	2495.863
58	2.0440	5.600	60.12	77.39	.998	1.000	-.048	20.383	19.108	2827.275
59	2.2836	6.257	60.00	77.38	.996	1.001	-.089	20.342	19.120	3158.686
60	2.5236	6.915	59.96	77.38	.995	1.001	-.101	20.331	19.125	3490.928
61	2.7643	7.574	59.94	77.38	.995	1.001	-.110	20.321	19.126	3823.564
62	3.0037	8.229	59.96	77.35	.995	1.002	-.095	20.336	19.149	4154.719

Table 32.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 15. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	64.816	64.816
FREE STREAM TEMPERATURE =	77.361	
WALL TEMPERATURE =	95.410	
WALL HEAT FLUX =	.04710	
FREE STREAM DENSITY =	.07372	
FREE STREAM KINEMATIC VISCOSITY =	.0001676	
DENSITY OF FLUID AT WALL =	.07132	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001777	
WALL/FREE STREAM DENSITY RATIO =	.96762	
LOCATION REYNOLDS NUMBER (REX) =	1172921.70	
INPUT VALUE OF VELOCITY DELTA =	.61000	
INPUT VALUE OF TEMPERATURE DELTA =	.66000	
CALCULATED DELTA =		.49433
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.06656	.06674
MOMENTUM THICKNESS (THETA) =	.04602	.04622
ENERGY-DISSIPATION THICKNESS =	.08234	.08248
ENTHALPY THICKNESS =	.00239	.00239
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.44617	1.44412
SHAPE FACTOR 32 (ENERGY/THETA) =	1.78910	1.78471
MOMENTUM THICKNESS REYNOLDS NUMBER =	1463.04	1489.26
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	2144.73	2150.67
SKIN FRICTION COEFFICIENT =	.004089	
FRICTION VELOCITY =	2.97952	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.16563
CLAUSERS 'DELTA' INTEGRAL =	-1.28001	-1.39997
CLAUSERS 'G' INTEGRAL =	8.37362	8.36688
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.06151	.06436
MOMENTUM THICKNESS - CONSTANT DENSITY =	.04648	.04667
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.32340	1.37880

LOCATION -X- 36.40000

Z = CENTERLINE

K = 0.2 X 10^{-6}

Table 33.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 15. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0053	.011	20.06	90.96	.310	.247	-15.016	6.736	4.816	7.448
2	.0063	.013	22.74	90.34	.351	.281	-14.123	7.631	5.490	8.845
3	.0078	.016	27.03	89.55	.417	.325	-12.662	9.072	6.340	10.941
4	.0085	.017	28.72	89.22	.443	.343	-12.113	9.641	6.702	11.919
5	.0093	.019	30.43	88.85	.469	.364	-11.541	10.212	7.103	13.037
6	.0111	.023	33.45	88.43	.516	.387	-10.527	11.227	7.561	15.552
7	.0125	.026	35.11	88.05	.542	.406	-9.970	11.784	7.970	17.509
8	.0137	.028	36.17	87.75	.558	.425	-9.615	12.138	8.296	19.185
9	.0155	.031	37.49	87.30	.576	.450	-9.173	12.581	8.787	21.701
10	.0179	.036	38.97	86.81	.601	.477	-8.674	13.080	9.313	25.054
11	.0195	.040	39.46	86.67	.609	.485	-8.503	13.251	9.463	27.290
12	.0211	.043	40.15	86.38	.619	.501	-8.278	13.476	9.779	29.526
13	.0227	.046	40.90	86.08	.631	.518	-8.026	13.726	10.104	31.761
14	.0246	.050	41.36	85.95	.638	.525	-7.872	13.882	10.246	34.416
15	.0267	.054	41.85	85.88	.646	.529	-7.708	14.046	10.320	37.351
16	.0287	.058	42.45	85.72	.655	.537	-7.507	14.246	10.492	40.145
17	.0302	.061	42.69	85.57	.659	.546	-7.426	14.328	10.654	42.241
18	.0307	.062	42.85	85.55	.660	.575	-6.971	14.783	11.223	51.324
19	.0343	.069	43.03	84.74	.665	.592	-6.640	15.114	11.553	60.546
20	.0504	.102	43.98	84.47	.709	.607	-6.341	15.433	11.842	70.467
21	.0567	.115	44.73	84.11	.721	.627	-6.070	15.684	12.235	79.271
22	.0635	.129	45.51	83.73	.733	.648	-5.807	15.947	12.646	88.772
23	.0704	.142	46.16	83.64	.743	.653	-5.591	16.163	12.747	98.414
24	.0765	.155	46.69	83.50	.751	.661	-5.412	16.342	12.896	106.938
25	.0833	.169	47.32	83.31	.764	.671	-5.142	16.612	13.106	116.440
26	.0905	.183	47.80	83.03	.769	.687	-5.021	16.733	13.406	126.500
27	.0964	.195	48.52	82.86	.780	.696	-4.796	16.958	13.590	134.745
28	.1035	.209	49.04	82.76	.786	.701	-4.657	17.096	13.694	144.666
29	.1106	.224	49.46	82.56	.794	.712	-4.463	17.270	13.909	154.587
30	.1164	.236	49.88	82.49	.803	.717	-4.284	17.470	13.990	162.691
31	.1237	.250	50.53	82.41	.810	.721	-4.124	17.630	14.074	172.892
32	.1307	.264	51.11	82.23	.819	.731	-3.928	17.826	14.274	182.673
33	.1473	.298	52.14	81.79	.835	.756	-3.582	18.172	14.751	205.869
34	.1651	.334	53.33	81.57	.854	.768	-3.184	18.570	14.985	230.741
35	.1825	.369	54.07	81.19	.865	.789	-2.935	18.819	15.394	255.055
36	.2047	.406	57.11	80.81	.881	.810	-2.585	19.169	15.811	280.486
37	.2176	.440	57.80	80.47	.892	.829	-2.355	19.398	16.182	304.101
38	.2357	.477	58.76	80.15	.907	.846	-2.034	19.720	16.523	329.393
39	.2525	.511	59.44	79.86	.917	.862	-1.804	19.950	16.836	352.868
40	.2705	.547	60.16	79.69	.928	.872	-1.562	20.192	17.023	378.020
41	.2876	.582	60.86	79.71	.939	.871	-1.327	20.427	16.996	401.914
42	.3053	.618	61.31	79.18	.946	.900	-1.176	20.576	17.570	426.647
43	.3552	.719	62.64	78.66	.966	.929	-.730	21.024	18.138	496.374
44	.4065	.823	63.56	78.15	.981	.957	-.422	21.331	18.690	566.660
45	.4594	.930	64.02	77.83	.989	.975	-.246	21.506	19.040	636.386
46	.5053	1.022	64.56	77.72	.996	.981	-.079	21.675	19.151	706.113
47	.5508	1.114	64.73	77.59	.999	.988	-.029	21.724	19.294	776.259
48	.6056	1.225	64.86	77.49	1.001	.994	.023	21.776	19.400	846.266
49	.6556	1.326	64.81	77.38	1.000	1.000	-.003	21.751	19.524	916.132
50	.7053	1.427	64.84	77.38	1.000	1.000	.008	21.761	19.519	985.579
51	.7554	1.528	64.80	77.39	1.000	1.000	-.005	21.749	19.515	1055.586
52	.8054	1.629	64.77	77.37	.999	1.001	-.016	21.737	19.533	1125.452
53	1.0256	2.075	64.79	77.40	1.000	.999	-.009	21.744	19.502	1433.144
54	1.2451	2.519	64.86	77.39	1.001	1.000	.013	21.767	19.514	1739.859
55	1.4654	2.964	64.84	77.39	1.000	1.000	.007	21.761	19.514	2047.691
56	1.6856	3.410	64.82	77.38	1.000	1.000	-.006	21.748	19.520	2355.383
57	1.9052	3.854	64.71	77.35	.998	1.000	-.036	21.718	19.520	2662.237
58	2.1256	4.300	64.76	77.32	.999	1.000	-.019	21.735	19.520	2970.208
59	2.3453	4.744	64.76	77.36	.999	1.000	-.019	21.734	19.526	3277.202
60	2.5652	5.189	64.71	77.35	.998	1.000	-.034	21.720	19.520	3584.475
61	2.7851	5.634	64.70	77.40	.998	.999	-.036	21.716	19.502	3891.748
62	3.0057	6.080	64.76	77.37	.999	1.001	-.018	21.736	19.539	4199.999

Table 33.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 17. GRID NO. 2

BOUNDARY LAYER PROPERTIES	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	65.395	65.395
FREE STREAM TEMPERATURE =	77.658	
WALL TEMPERATURE =	95.250	
WALL HEAT FLUX =	.04640	
FREE STREAM DENSITY =	.07457	
FREE STREAM KINEMATIC VISCOSITY =	.0001658	
DENSITY OF FLUID AT WALL =	.07220	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001755	
WALL/FREE STREAM DENSITY RATIO =	.96830	
LOCATION REYNOLDS NUMBER (REX) =	1196573.20	
INPUT VALUE OF VELOCITY DELTA =	.61000	
INPUT VALUE OF TEMPERATURE DELTA =	.66000	
CALCULATED DELTA =		.50294
DELTA 99.5% INPUT =	.52000	
DISPLACEMENT THICKNESS (DELSTAR) =	.06571	.06624
MOMENTUM THICKNESS (THETA) =	.04595	.04618
ENERGY-DISSIPATION THICKNESS =	.08254	.08261
ENTHALPY THICKNESS =	.00237	.00237
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.42991	1.43428
SHAPE FACTOR 32 (ENERGY/THETA) =	1.79617	1.78871
MOMENTUM THICKNESS REYNOLDS NUMBER =	1510.56	1518.23
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	2159.96	2177.57
SKIN FRICTION COEFFICIENT =	.004111	
FRICTION VELOCITY =	3.01300	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.13500
CLAUSERS 'DELTA' INTEGRAL =	-1.23727	-1.38642
CLAUSERS 'G' INTEGRAL =	7.98431	8.12601
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.06017	.06368
MOMENTUM THICKNESS - CONSTANT DENSITY =	.04639	.04663
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.29716	1.36995

LOCATION -X- 36.40000

Z = -6 INCHES

K = 0.2 X 10^{-6}

Table 34.

KLDM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 17. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0067	.012	26.88	89.85	.411	.307	-12.761	8.923	6.080	9.057
2	.0079	.014	29.24	89.12	.447	.346	-12.000	9.704	6.695	10.774
3	.0083	.015	30.94	88.66	.473	.363	-11.434	10.270	7.190	11.919
4	.0098	.019	33.53	88.55	.513	.381	-10.575	11.129	7.541	14.065
5	.0106	.020	34.41	88.34	.526	.393	-10.264	11.420	7.771	15.209
6	.0121	.023	36.23	87.87	.554	.420	-9.660	12.024	8.305	17.356
7	.0136	.026	37.47	87.37	.573	.448	-9.267	12.436	8.669	19.502
8	.0143	.028	38.10	87.25	.583	.455	-9.059	12.645	9.005	20.503
9	.0165	.032	39.22	86.92	.600	.474	-8.689	13.015	9.373	23.651
10	.0185	.036	40.28	86.60	.616	.491	-8.335	13.369	9.728	26.513
11	.0205	.039	40.97	86.36	.626	.505	-8.107	13.598	10.002	29.374
12	.0222	.043	41.72	86.26	.638	.511	-7.859	13.845	10.116	31.807
13	.0235	.045	41.99	86.04	.642	.524	-7.770	13.935	10.366	33.667
14	.0256	.050	42.59	85.79	.651	.538	-7.567	14.137	10.641	36.957
15	.0277	.053	43.03	85.76	.658	.539	-7.423	14.281	10.679	39.676
16	.0300	.058	43.34	85.58	.663	.550	-7.321	14.383	10.885	42.967
17	.0312	.060	43.71	85.45	.668	.557	-7.197	14.507	11.024	44.664
18	.0376	.072	45.06	85.01	.689	.582	-6.744	14.961	11.522	53.841
19	.0448	.086	46.01	84.68	.704	.601	-6.434	15.270	11.898	64.143
20	.0515	.099	46.81	84.58	.716	.607	-6.167	15.537	12.007	73.729
21	.0576	.111	47.61	84.29	.728	.623	-5.901	15.803	12.337	82.457
22	.0647	.124	48.42	83.99	.740	.640	-5.634	16.070	12.665	92.615
23	.0716	.138	48.98	83.79	.749	.651	-5.445	16.255	12.891	102.488
24	.0773	.149	49.53	83.64	.757	.660	-5.264	16.440	13.064	110.643
25	.0847	.163	50.27	83.35	.769	.676	-5.020	16.684	13.386	121.231
26	.0917	.176	50.75	83.25	.776	.682	-4.861	16.843	13.498	131.247
27	.0976	.188	51.17	83.01	.782	.696	-4.722	16.982	13.768	139.689
28	.1044	.201	51.76	82.91	.792	.702	-4.524	17.180	13.887	149.418
29	.1115	.214	52.38	82.68	.801	.715	-4.320	17.384	14.146	159.577
30	.1173	.226	52.66	82.56	.806	.720	-4.220	17.484	14.257	167.875
31	.1244	.239	53.24	82.56	.814	.720	-4.033	17.671	14.252	178.034
32	.1316	.253	53.76	82.47	.822	.727	-3.856	17.848	14.382	188.336
33	.1485	.286	54.82	81.96	.838	.756	-3.509	18.195	14.956	212.516
34	.1662	.320	55.95	81.66	.856	.772	-3.134	18.570	15.287	237.841
35	.1835	.353	56.85	81.22	.869	.798	-2.836	18.868	15.789	262.594
36	.2015	.388	57.68	81.04	.882	.808	-2.561	19.143	15.991	286.348
37	.2163	.420	58.52	80.79	.895	.822	-2.261	19.423	16.270	312.385
38	.2364	.455	59.20	80.47	.905	.840	-2.055	19.649	16.626	338.283
39	.2534	.487	60.06	80.27	.918	.851	-1.770	19.934	16.854	362.606
40	.2716	.522	60.65	80.07	.926	.863	-1.573	20.131	17.084	388.647
41	.2883	.554	61.31	79.67	.936	.885	-1.355	20.350	17.527	412.541
42	.3064	.589	61.84	79.46	.946	.897	-1.161	20.524	17.764	438.439
43	.3501	.665	63.15	79.04	.966	.921	-.746	20.958	18.241	509.549
44	.4065	.782	64.15	78.48	.981	.953	-.413	21.291	18.669	581.661
45	.4564	.878	64.73	78.11	.990	.974	-.222	21.483	19.287	653.058
46	.5065	.974	64.97	77.94	.993	.984	-.142	21.564	19.479	724.741
47	.5564	1.070	65.23	77.88	.996	.988	-.053	21.651	19.550	796.137
48	.6065	1.166	65.41	77.71	1.000	.997	.007	21.711	19.734	867.820
49	.6563	1.262	65.43	77.66	1.001	1.000	.011	21.716	19.798	939.074
50	.7067	1.359	65.42	77.67	1.000	1.000	.009	21.713	19.786	1011.166
51	.7566	1.455	65.33	77.65	.999	1.000	-.021	21.684	19.803	1082.582
52	.8065	1.551	65.33	77.66	.999	1.000	-.022	21.683	19.796	1153.979
53	1.0265	1.974	65.36	77.67	.999	.999	-.013	21.691	19.784	1468.754
54	1.2462	2.397	65.30	77.67	.999	.999	-.033	21.672	19.778	1783.100
55	1.4666	2.820	65.36	77.66	1.000	1.000	-.006	21.698	19.790	2098.447
56	1.6864	3.243	65.31	77.67	.999	.999	-.026	21.676	19.778	2412.936
57	1.9061	3.666	65.24	77.67	.998	.999	-.051	21.653	19.785	2727.281
58	2.1265	4.089	65.23	77.65	.998	1.001	-.054	21.650	19.810	3042.629
59	2.3464	4.512	65.26	77.64	.998	1.001	-.044	21.660	19.816	3357.260
60	2.5661	4.935	65.20	77.63	.997	1.001	-.065	21.639	19.822	3671.606
61	2.7862	5.356	65.18	77.63	.997	1.002	-.070	21.634	19.828	3986.524
62	3.0065	5.782	65.20	77.64	.997	1.001	-.064	21.640	19.815	4301.728

Table 34.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 18. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	71.545	71.545
FREE STREAM TEMPERATURE =	77.656	
WALL TEMPERATURE =	95.680	
WALL HEAT FLUX =	.04720	
FREE STREAM DENSITY =	.07457	
FREE STREAM KINEMATIC VISCOSITY =	.0001658	
DENSITY OF FLUID AT WALL =	.07215	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001757	
WALL/FREE STREAM DENSITY RATIO =	.96755	
LOCATION REYNOLDS NUMBER (REX) =	1740696.19	
INPUT VALUE OF VELOCITY DELTA =	.73000	
INPUT VALUE OF TEMPERATURE DELTA =	.83000	
CALCULATED DELTA =		.61315
DELTA 99.5% INPUT =	.63200	
DISPLACEMENT THICKNESS (DELSTAR) =	.07561	.07601
MOMENTUM THICKNESS (THETA) =	.05354	.05379
ENERGY-DISSIPATION THICKNESS =	.09652	.09664
ENTHALPY THICKNESS =	.00302	.00302
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.41226	1.41320
SHAPE FACTOR 32 (ENERGY/THETA) =	1.80294	1.79660
MOMENTUM THICKNESS REYNOLDS NUMBER =	1925.44	1934.39
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	2719.21	2733.68
SKIN FRICTION COEFFICIENT =	.003936	
FRICTION VELOCITY =	3.22660	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.09858
CLAUSERS 'DELTA' INTEGRAL =	-1.46930	-1.61866
CLAUSERS 'G' INTEGRAL =	9.11046	9.18365
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.06943	.07300
MOMENTUM THICKNESS - CONSTANT DENSITY =	.05406	.05432
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.28420	1.34366

LOCATION -X- 48.40000

Z = CENTERLINE

K = 0.2 x 10^{-6}

Table 35.

KLDM<1X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 18. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0063	.010	29.26	90.54	.409	.285	-13.106	9.067	6.087	9.686
2	.0077	.012	32.04	89.92	.448	.320	-12.243	9.930	6.823	11.828
3	.0087	.014	34.20	89.55	.478	.340	-11.574	10.599	7.262	13.358
4	.0096	.015	36.23	89.08	.506	.366	-10.945	11.226	7.809	14.735
5	.0106	.017	37.45	88.71	.523	.387	-10.566	11.607	8.254	16.265
6	.0121	.019	39.56	88.32	.553	.409	-9.907	12.266	8.718	18.561
7	.0136	.022	40.87	87.96	.571	.428	-9.507	12.667	9.137	20.856
8	.0145	.023	41.56	87.71	.581	.442	-9.287	12.887	9.429	22.233
9	.0166	.026	42.87	87.38	.599	.460	-8.867	13.287	9.824	25.446
10	.0186	.029	43.94	87.13	.614	.474	-8.555	13.618	10.117	28.506
11	.0205	.032	44.77	86.97	.626	.483	-8.297	13.877	10.309	31.414
12	.0221	.035	45.19	86.67	.632	.500	-8.168	14.005	10.663	33.862
13	.0236	.037	45.62	86.52	.636	.508	-8.035	14.136	10.846	36.157
14	.0254	.040	46.12	86.37	.645	.516	-7.880	14.294	11.017	38.911
15	.0274	.043	46.63	86.21	.652	.525	-7.722	14.451	11.208	41.972
16	.0294	.046	47.20	86.05	.657	.533	-7.607	14.567	11.363	45.032
17	.0311	.049	47.66	85.98	.666	.538	-7.404	14.770	11.479	47.633
18	.0374	.059	48.87	85.56	.679	.560	-7.121	15.053	11.950	57.273
19	.0447	.071	49.63	85.30	.697	.576	-6.729	15.444	12.292	68.443
20	.0513	.081	50.77	84.98	.716	.593	-6.437	15.736	12.660	78.542
21	.0576	.091	51.45	84.75	.719	.607	-6.227	15.947	12.955	88.182
22	.0644	.102	52.26	84.49	.736	.621	-5.976	16.196	13.251	98.893
23	.0716	.113	53.07	84.33	.742	.630	-5.727	16.446	13.440	109.604
24	.0774	.123	53.65	84.16	.756	.639	-5.548	16.626	13.632	118.478
25	.0844	.134	54.29	84.10	.759	.642	-5.349	16.825	13.706	129.189
26	.0914	.145	54.79	83.81	.766	.658	-5.194	16.980	14.048	139.900
27	.0978	.155	55.42	83.66	.775	.667	-4.996	17.177	14.229	149.693
28	.1044	.165	55.79	83.47	.780	.677	-4.864	17.290	14.448	159.792
29	.1113	.176	56.45	83.37	.789	.683	-4.678	17.495	14.567	170.350
30	.1179	.186	56.89	83.19	.795	.693	-4.542	17.631	14.780	179.531
31	.1246	.197	57.38	83.04	.802	.701	-4.389	17.784	14.965	190.701
32	.1315	.208	57.74	82.95	.807	.706	-4.276	17.895	15.063	201.259
33	.1485	.235	58.97	82.71	.824	.720	-3.898	18.276	15.358	227.271
34	.1662	.263	59.92	82.34	.838	.740	-3.602	18.572	15.796	254.355
35	.1836	.291	60.66	82.01	.851	.758	-3.311	18.863	16.182	280.979
36	.2018	.319	61.74	81.75	.863	.773	-3.038	19.135	16.486	308.627
37	.2185	.346	62.43	81.69	.873	.776	-2.824	19.349	16.554	334.361
38	.2364	.374	63.29	81.42	.885	.791	-2.558	19.615	16.879	361.770
39	.2536	.401	63.97	81.06	.894	.811	-2.348	19.826	17.305	386.089
40	.2716	.430	64.92	80.85	.907	.823	-2.052	20.121	17.558	415.937
41	.2887	.457	65.37	80.49	.914	.843	-1.913	20.261	17.975	441.796
42	.3063	.485	66.21	80.23	.925	.857	-1.652	20.522	18.264	468.727
43	.3524	.558	67.45	79.89	.943	.876	-1.269	20.904	18.668	539.266
44	.3967	.628	68.66	79.35	.960	.906	-.896	21.278	19.331	611.642
45	.4406	.707	69.55	78.93	.973	.929	-.607	21.566	19.824	683.405
46	.4926	.779	70.35	78.65	.974	.945	-.462	21.711	20.155	753.791
47	.5345	.845	70.89	78.18	.980	.971	-.266	21.907	20.717	825.555
48	.5866	.928	71.26	78.06	.994	.978	-.143	22.031	20.860	897.624
49	.6324	1.001	71.22	77.87	.995	.988	-.100	22.074	21.084	967.704
50	.6794	1.075	71.37	77.80	.996	.992	-.054	22.120	21.169	1039.621
51	.7267	1.150	71.51	77.75	1.000	.995	-.010	22.163	21.219	1111.996
52	.7724	1.222	71.63	77.72	1.001	.997	.026	22.200	21.263	1181.923
53	.8195	1.297	71.49	77.66	.999	1.000	-.017	22.156	21.329	1253.993
54	.8663	1.371	71.52	77.67	1.000	.999	-.009	22.165	21.321	1325.603
55	.9124	1.444	71.56	77.65	1.000	1.000	.005	22.179	21.336	1396.143
56	.9596	1.518	71.56	77.65	1.001	1.001	.012	22.185	21.340	1468.365
57	1.0060	1.593	71.52	77.66	1.000	1.000	-.009	22.165	21.326	1540.128
58	1.0524	1.666	71.53	77.63	1.000	1.001	-.004	22.170	21.360	1612.003
59	1.0988	1.739	71.55	77.63	1.000	1.001	-.001	22.174	21.360	1684.751
60	1.1452	1.812	71.54	77.63	1.000	1.002	-.003	22.171	21.367	1757.751
61	1.1916	1.886	71.47	77.63	.999	1.001	-.022	22.154	21.360	1830.626
62	1.2380	1.959	71.51	77.63	.999	1.002	-.012	22.162	21.367	1903.959
63	1.2844	2.032	71.43	77.63	.998	1.001	-.035	22.139	21.361	1976.139
64	1.3308	2.105	71.42	77.61	.998	1.003	-.040	22.133	21.394	2048.708
65	1.3772	2.179	71.51	77.60	.999	1.003	-.012	22.161	21.399	2121.041
66	1.4236	2.252	71.45	77.62	.999	1.002	-.026	22.145	21.380	2193.374
67	1.4700	2.325	71.43	77.59	.998	1.003	-.035	22.136	21.407	2265.402

Table 35.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 19. GRID NO. 2

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	77.041	77.041
FREE STREAM TEMPERATURE	=	77.634	
WALL TEMPERATURE	=	94.770	
WALL HEAT FLUX	=	.04680	
FREE STREAM DENSITY	=	.07457	
FREE STREAM KINEMATIC VISCOSITY	=	.0001658	
DENSITY OF FLUID AT WALL	=	.07226	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001752	
WALL/FREE STREAM DENSITY RATIO	=	.96909	
LOCATION REYNOLDS NUMBER (REX)	=	2339329.28	
INPUT VALUE OF VELOCITY DELTA	=	.85000	
INPUT VALUE OF TEMPERATURE DELTA	=	.91000	
CALCULATED DELTA	=		.70793
DELTA 99.5% INPUT	=	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.08268	.08320
MOMENTUM THICKNESS (THETA)	=	.05957	.05972
ENERGY-DISSIPATION THICKNESS	=	.10763	.10769
ENTHALPY THICKNESS	=	.00334	.00333
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.39138	1.39325
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.80668	1.80328
MOMENTUM THICKNESS REYNOLDS NUMBER	=	2307.09	2312.87
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	3210.03	3222.41
SKIN FRICTION COEFFICIENT	=	.00383I	
FRICTION VELOCITY	=	3.42528	
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		.06066
CLAUSERS 'DELTA' INTEGRAL	=	-1.68054	-1.79646
CLAUSERS 'G' INTEGRAL	=	9.61706	9.90313
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.07713	.07987
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.06014	.06030
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.28251	1.32466

LOCATION -X- 60.40000

Z = CENTERLINE

$K = 0.2 \times 10^{-6}$

Table 36.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 19. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0048	.007	25.74	91.90	.334	.167	-14.978	7.514	3.641	7.868
2	.0064	.009	30.77	90.76	.399	.234	-13.509	8.983	5.086	10.475
3	.0070	.010	32.94	90.35	.428	.258	-12.876	9.616	5.604	11.452
4	.0078	.011	35.16	89.81	.456	.290	-12.227	10.265	6.301	12.756
5	.0093	.013	38.43	88.91	.499	.342	-11.273	11.219	7.440	15.199
6	.0107	.015	40.81	88.45	.530	.369	-10.577	11.915	8.023	17.460
7	.0123	.017	42.56	88.15	.552	.386	-10.065	12.407	8.401	20.066
8	.0129	.018	43.20	88.05	.561	.392	-9.879	12.613	8.529	21.064
9	.0157	.022	45.21	87.40	.587	.430	-9.293	13.199	9.361	24.973
10	.0170	.024	46.42	87.14	.603	.445	-8.940	13.552	9.688	27.743
11	.0193	.027	47.38	86.89	.615	.460	-8.661	13.831	10.006	31.490
12	.0207	.029	48.05	86.68	.624	.472	-8.465	14.027	10.270	33.770
13	.0220	.031	48.56	86.63	.630	.475	-8.333	14.159	10.335	35.868
14	.0244	.035	49.12	86.26	.638	.496	-8.153	14.339	10.798	39.798
15	.0255	.037	49.79	86.39	.646	.489	-7.957	14.535	10.635	42.242
16	.0280	.040	50.29	86.35	.653	.491	-7.811	14.681	10.687	45.663
17	.0296	.042	50.64	86.20	.657	.500	-7.708	14.784	10.676	46.269
18	.0362	.051	52.15	85.66	.677	.532	-7.267	15.225	11.570	59.021
19	.0426	.061	53.16	85.28	.690	.554	-6.973	15.519	12.049	69.773
20	.0503	.071	54.20	84.98	.703	.572	-6.670	15.822	12.433	81.991
21	.0580	.079	55.16	84.94	.716	.573	-6.369	16.103	12.472	91.276
22	.0629	.089	55.95	84.73	.725	.586	-6.167	16.305	12.749	102.517
23	.0702	.099	56.60	84.51	.735	.599	-5.967	16.525	13.028	114.409
24	.0761	.106	57.33	84.33	.744	.609	-5.753	16.739	13.256	124.020
25	.0829	.117	57.98	84.04	.753	.626	-5.565	16.927	13.619	135.098
26	.0903	.126	58.63	83.97	.761	.630	-5.374	17.118	13.711	147.153
27	.0960	.136	59.06	83.82	.767	.639	-5.250	17.242	13.905	156.439
28	.1030	.146	59.46	83.71	.772	.646	-5.127	17.365	14.041	167.842
29	.1102	.156	60.23	83.56	.782	.654	-4.907	17.585	14.235	179.571
30	.1160	.164	60.82	83.34	.789	.667	-4.735	17.757	14.509	189.020
31	.1231	.174	61.15	83.15	.794	.676	-4.641	17.851	14.745	200.586
32	.1298	.183	61.61	83.02	.800	.685	-4.506	17.986	14.910	211.501
33	.1469	.208	62.70	82.86	.815	.695	-4.169	18.323	15.117	239.358
34	.1647	.233	63.71	82.55	.827	.713	-3.891	18.601	15.510	268.355
35	.1823	.256	64.96	82.29	.843	.728	-3.523	18.969	15.839	297.027
36	.1998	.282	65.42	82.15	.849	.736	-3.391	19.101	16.020	325.535
37	.2171	.307	66.35	81.84	.861	.754	-3.126	19.366	16.412	353.718
38	.2348	.332	67.19	81.56	.872	.771	-2.875	19.617	16.773	382.552
39	.2522	.356	67.99	81.31	.882	.766	-2.644	19.848	17.088	410.898
40	.2698	.381	68.71	80.94	.892	.807	-2.432	20.060	17.555	439.569
41	.2868	.405	69.34	80.87	.900	.811	-2.249	20.243	17.646	467.263
42	.3049	.431	69.91	80.59	.907	.827	-2.063	20.409	18.000	496.749
43	.3648	.515	71.78	79.99	.932	.862	-1.537	20.955	18.760	594.330
44	.4249	.600	73.35	79.56	.952	.887	-1.084	21.408	19.284	692.237
45	.4848	.685	74.63	79.15	.967	.912	-.732	21.760	19.833	789.817
46	.5449	.770	75.46	78.43	.979	.954	-.460	22.012	20.746	887.724
47	.6050	.855	76.04	78.19	.987	.968	-.291	22.201	21.051	985.630
48	.6649	.939	76.44	78.06	.993	.975	-.160	22.332	21.206	1083.211
49	.7248	1.024	76.76	77.89	.996	.985	-.062	22.430	21.427	1180.792
50	.7848	1.109	76.93	77.72	.999	.995	-.033	22.459	21.640	1278.535
51	.8453	1.194	77.02	77.66	1.000	.999	-.006	22.486	21.720	1377.094
52	.9049	1.278	77.05	77.63	1.000	1.000	.002	22.494	21.751	1474.186
53	.9652	1.363	77.05	77.64	1.000	.999	.003	22.495	21.739	1572.418
54	1.0250	1.448	77.02	77.63	1.000	1.000	-.005	22.487	21.759	1669.836
55	1.0850	1.533	77.03	77.63	1.000	1.000	-.004	22.488	21.760	1767.579
56	1.1451	1.618	77.05	77.61	1.000	1.002	.003	22.495	21.786	1865.486
57	1.2048	1.702	77.00	77.60	.999	1.002	-.013	22.479	21.794	1962.741
58	1.3847	1.956	76.97	77.61	.999	1.002	-.022	22.470	21.788	2255.809
59	1.5646	2.210	76.96	77.59	.999	1.003	-.023	22.469	21.808	2548.877
60	1.7446	2.464	76.96	77.60	.999	1.002	-.025	22.467	21.794	2842.107
61	1.9246	2.719	76.92	77.61	.996	1.001	-.034	22.458	21.780	3135.338
62	2.1047	2.973	76.79	77.60	.997	1.002	-.073	22.419	21.794	3428.732
63	2.2847	3.227	76.85	77.59	.997	1.002	-.057	22.435	21.802	3721.963
64	2.4649	3.482	76.83	77.59	.997	1.003	-.061	22.431	21.808	4015.520
65	2.6446	3.736	76.83	77.61	.997	1.002	-.061	22.431	21.767	4308.587
66	2.8247	3.990	76.72	77.61	.996	1.002	-.099	22.393	21.787	4601.655
67	3.0048	4.245	76.69	77.61	.998	1.001	-.046	22.446	21.780	4895.049

Table 36.

KLDM21X TAPE 4752R- FILES 66-86, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 20. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	76.968	76.968
FREE STREAM TEMPERATURE =	77.629	
WALL TEMPERATURE =	95.200	
WALL HEAT FLUX =	.04780	
FREE STREAM DENSITY =	.07457	
FREE STREAM KINEMATIC VISCOSITY =	.0001658	
DENSITY OF FLUID AT WALL =	.07221	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001755	
WALL/FREE STREAM DENSITY RATIO =	.96833	
LOCATION REYNOLDS NUMBER (REX) =	2337130.00	
INPUT VALUE OF VELOCITY DELTA =	.91000	
INPUT VALUE OF TEMPERATURE DELTA =	1.03000	
CALCULATED DELTA =		.69942
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.08447	.08481
MOMENTUM THICKNESS (THETA) =	.06049	.06059
ENERGY-DISSIPATION THICKNESS =	.10914	.10913
ENTHALPY THICKNESS =	.00350	.00350
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.39645	1.39983
SHAPE FACTOR 32 (ENERGY/THETA) =	1.80427	1.80112
MOMENTUM THICKNESS REYNOLDS NUMBER =	2340.52	2344.45
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	3268.41	3281.84
SKIN FRICTION COEFFICIENT =	.003777	
FRICTION VELOCITY =	3.39920	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.10217
CLAUSERS 'DELTA' INTEGRAL =	-1.72858	-1.84138
CLAUSERS 'G' INTEGRAL =	10.19570	10.32218
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.07866	.08132
MOMENTUM THICKNESS - CONSTANT DENSITY =	.06108	.06119
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.28766	1.32902

LOCATION -X- 60.40000

Z = +6 INCHES

K = 0.2 x 10^{-6}

Table 37.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 20. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0046	.007	26.37	91.13	.343	.232	-14.886	7.757	5.016	7.475
2	.0053	.008	27.53	90.72	.358	.255	-14.545	8.098	5.521	8.605
3	.0069	.010	31.79	89.52	.413	.300	-13.291	9.352	6.503	11.188
4	.0082	.012	35.68	89.37	.464	.332	-12.146	10.497	7.185	13.267
5	.0093	.013	37.75	89.01	.490	.352	-11.538	11.105	7.623	15.063
6	.0107	.015	39.83	88.57	.518	.377	-10.925	11.718	8.167	17.323
7	.0124	.018	42.11	88.03	.547	.408	-10.253	12.390	8.836	20.068
8	.0146	.021	44.22	87.65	.575	.430	-9.633	13.009	9.310	23.619
9	.0167	.024	45.51	87.37	.591	.446	-9.254	13.389	9.648	27.010
10	.0182	.026	46.43	87.27	.603	.451	-8.963	13.660	9.776	29.431
11	.0197	.028	46.72	87.12	.607	.460	-8.897	13.746	9.961	31.853
12	.0214	.031	47.54	86.89	.618	.473	-8.656	13.985	10.236	34.598
13	.0237	.034	48.44	86.61	.629	.489	-8.393	14.250	10.583	38 311
14	.0259	.037	48.94	86.42	.636	.500	-8.245	14.397	10.826	41.863
15	.0272	.039	49.40	86.35	.642	.504	-8.111	14.532	10.909	43.961
16	.0336	.048	50.92	86.05	.662	.521	-7.663	14.980	11.274	54.294
17	.0406	.058	52.34	85.64	.680	.544	-7.247	15.396	11.779	65.595
18	.0476	.068	53.16	85.40	.691	.558	-7.004	15.639	12.082	76.896
19	.0534	.076	54.19	85.03	.704	.579	-6.700	15.943	12.537	86.260
20	.0604	.086	55.04	84.82	.715	.591	-6.452	16.191	12.796	97.561
21	.0678	.097	55.97	84.74	.727	.595	-6.176	16.465	12.892	109.508
22	.0737	.105	56.65	84.53	.736	.607	-5.977	16.665	13.146	119.033
23	.0806	.115	57.30	84.27	.745	.622	-5.785	16.856	13.471	130.173
24	.0877	.125	57.99	84.09	.753	.632	-5.584	17.058	13.687	141.636
25	.0937	.134	58.42	83.99	.759	.640	-5.457	17.186	13.851	151.322
26	.1007	.144	59.22	83.84	.769	.646	-5.222	17.421	14.000	162.623
27	.1074	.154	59.64	83.89	.775	.644	-5.097	17.546	13.940	173.440
28	.1137	.163	60.27	83.80	.783	.649	-4.912	17.731	14.044	183.611
29	.1205	.172	60.94	83.53	.787	.664	-4.832	17.811	14.378	194.569
30	.1274	.182	61.20	83.24	.795	.681	-4.638	18.005	14.743	205.729
31	.1447	.207	62.30	83.01	.809	.694	-4.316	18.327	15.024	233.659
32	.1622	.232	63.36	82.80	.823	.706	-4.004	18.639	15.282	261.912
33	.1794	.257	64.26	82.56	.835	.719	-3.740	18.903	15.575	289.680
34	.1973	.282	65.43	82.15	.850	.743	-3.395	19.248	16.063	318.579
35	.2145	.307	66.12	81.99	.859	.752	-3.192	19.451	16.277	346.347
36	.2325	.332	67.05	81.70	.871	.768	-2.918	19.725	16.631	375.408
37	.2496	.357	67.52	81.62	.877	.773	-2.761	19.662	16.736	403.015
38	.2675	.383	68.31	81.35	.887	.788	-2.548	20.095	17.068	431.913
39	.2844	.407	68.88	81.14	.895	.800	-2.360	20.263	17.332	459.197
40	.3025	.433	69.64	80.83	.905	.818	-2.155	20.488	17.708	486.419
41	.3525	.518	71.56	80.18	.930	.855	-1.564	21.059	18.505	565.286
42	.4267	.604	73.09	79.60	.950	.888	-1.140	21.503	19.220	682.476
43	.4826	.690	74.36	79.07	.966	.918	-.766	21.877	19.884	779.181
44	.5424	.776	75.37	78.68	.979	.940	-.470	22.173	20.365	875.725
45	.6025	.861	75.95	78.43	.987	.955	-.300	22.343	20.671	972.753
46	.6626	.947	76.39	78.07	.992	.975	-.162	22.481	21.115	1069.782
47	.7225	1.033	76.60	77.85	.995	.982	-.108	22.535	21.257	1166.467
48	.7825	1.119	76.80	77.78	.998	.991	-.051	22.592	21.467	1263.354
49	.8424	1.204	76.87	77.73	.999	.994	-.030	22.613	21.527	1360.059
50	.9024	1.290	76.95	77.68	1.000	.997	-.006	22.637	21.588	1456.926
51	.9625	1.376	76.94	77.65	1.000	.999	-.007	22.636	21.628	1553.954
52	1.0227	1.462	77.00	77.64	1.000	.999	.010	22.653	21.642	1651.144
53	1.0826	1.546	76.96	77.63	1.000	1.000	-.003	22.639	21.655	1747.850
54	1.1426	1.634	77.00	77.63	1.000	1.000	.009	22.652	21.655	1845.039
55	1.2025	1.719	76.98	77.63	1.000	1.000	.005	22.647	21.655	1941.422
56	1.3622	1.976	76.83	77.59	.996	1.002	-.040	22.603	21.696	2231.538
57	1.5622	2.234	76.90	77.60	.999	1.002	-.020	22.623	21.696	2522.139
58	1.7621	2.491	76.86	77.62	.999	1.000	-.026	22.617	21.662	2812.578
59	1.9221	2.748	76.86	77.60	.999	1.002	-.025	22.616	21.689	3103.179
60	2.1021	3.006	76.75	77.62	.997	1.001	-.064	22.579	21.669	3393.779
61	2.2822	3.263	76.73	77.60	.997	1.002	-.070	22.572	21.696	3684.541
62	2.4622	3.521	76.74	77.61	.997	1.001	-.067	22.576	21.676	3975.788
63	2.6424	3.778	76.72	77.61	.997	1.001	-.072	22.571	21.682	4266.065
64	2.8222	4.035	76.75	77.63	.997	1.000	-.070	22.573	21.655	4556.343
65	3.0024	4.293	76.70	77.61	.997	1.001	-.079	22.564	21.676	4847.267

Table 37.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 21. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	77.042	77.042
FREE STREAM TEMPERATURE =	77.578	
WALL TEMPERATURE =	95.150	
WALL HEAT FLUX =	.04800	
FREE STREAM DENSITY =	.07458	
FREE STREAM KINEMATIC VISCOSITY =	.0001657	
DENSITY OF FLUID AT WALL =	.07222	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001754	
WALL/FREE STREAM DENSITY RATIO =	.96833	
LOCATION REYNOLDS NUMBER (REX) =	2339761.59	
INPUT VALUE OF VELOCITY DELTA =	.91000	
INPUT VALUE OF TEMPERATURE DELTA =	.97000	
CALCULATED DELTA =		.69962
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.08452	.08479
MOMENTUM THICKNESS (THETA) =	.06040	.06049
ENERGY-DISSIPATION THICKNESS =	.10890	.10891
ENTHALPY THICKNESS =	.00352	.00352
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.39939	1.40159
SHAPE FACTOR 32 (ENERGY/THETA) =	1.80299	1.80039
MOMENTUM THICKNESS REYNOLDS NUMBER =	2339.79	2343.44
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	3274.28	3284.54
SKIN FRICTION COEFFICIENT =	.003777	
FRICTION VELOCITY =	3.40240	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.10156
CLAUSERS 'DELTA' INTEGRAL =	-1.73613	-1.84027
CLAUSERS 'G' INTEGRAL =	10.25166	10.33961
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.07884	.08127
MOMENTUM THICKNESS - CONSTANT DENSITY =	.06101	.06111
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.29225	1.33002

LOCATION -X- 60.40000

Z = -6 INCHES

K = 0.2×10^{-6}

Table 38.

KLDM-1X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 21. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0043	.006	24.65	91.70	.323	.196	-15.340	7.303	4.238	6.998
2	.0056	.008	27.44	90.75	.356	.250	-14.580	8.064	5.406	9.423
3	.0067	.010	30.59	90.36	.397	.273	-13.653	8.991	5.887	10.677
4	.0075	.011	32.76	89.92	.425	.298	-13.014	9.629	6.431	12.170
5	.0088	.013	36.06	89.36	.468	.329	-12.044	10.600	7.112	14.271
6	.0102	.015	38.91	88.94	.505	.354	-11.207	11.437	7.632	16.534
7	.0116	.017	41.20	88.45	.535	.381	-10.533	12.110	8.226	19.120
8	.0125	.018	41.99	88.31	.545	.389	-10.302	12.341	8.401	20.251
9	.0147	.021	44.08	87.95	.572	.410	-9.686	12.957	8.841	23.807
10	.0168	.024	45.49	87.55	.590	.433	-9.274	13.369	9.341	27.201
11	.0182	.026	46.29	87.27	.601	.448	-9.038	13.605	9.680	29.625
12	.0202	.029	47.14	87.11	.612	.458	-8.787	13.856	9.877	32.696
13	.0216	.031	47.80	86.97	.620	.465	-8.593	14.050	10.045	34.959
14	.0233	.033	48.32	86.72	.627	.480	-8.442	14.201	10.355	37.707
15	.0256	.037	49.17	86.42	.638	.497	-8.192	14.451	10.725	41.424
16	.0276	.039	49.66	86.27	.645	.505	-8.049	14.594	10.904	44.656
17	.0291	.042	50.06	86.21	.650	.509	-7.930	14.713	10.986	47.061
18	.0334	.051	51.37	85.90	.667	.526	-7.545	15.098	11.359	57.263
19	.0427	.061	52.63	85.55	.683	.546	-7.174	15.469	11.792	69.061
20	.0495	.071	53.73	85.27	.697	.562	-6.850	15.793	12.143	80.052
21	.0557	.079	54.39	85.09	.706	.573	-6.656	15.987	12.364	89.426
22	.0624	.089	55.31	84.97	.718	.580	-6.387	16.256	12.512	100.901
23	.0696	.100	56.19	84.80	.729	.589	-6.129	16.515	12.714	112.538
24	.0757	.108	56.74	84.62	.736	.599	-5.967	16.677	12.937	121.750
25	.0825	.118	57.46	84.35	.746	.615	-5.749	16.894	13.269	133.387
26	.0893	.128	58.06	84.09	.754	.629	-5.574	17.069	13.583	144.377
27	.0953	.136	58.52	83.98	.760	.636	-5.445	17.199	13.728	154.075
28	.1024	.146	59.21	83.64	.768	.643	-5.242	17.401	13.889	165.550
29	.1094	.156	59.81	83.78	.776	.647	-5.034	17.609	13.966	176.863
30	.1156	.165	60.12	83.69	.780	.658	-4.973	17.671	14.206	186.884
31	.1224	.175	60.76	83.56	.789	.663	-4.760	17.863	14.309	197.874
32	.1297	.185	61.58	83.43	.799	.667	-4.544	18.100	14.394	209.673
33	.1457	.210	62.36	83.08	.809	.687	-4.315	18.329	14.831	237.149
34	.1641	.235	63.44	83.03	.823	.690	-3.998	18.645	14.892	265.271
35	.1813	.259	64.41	82.64	.836	.712	-3.714	18.929	15.368	293.070
36	.1995	.285	65.54	82.21	.851	.736	-3.361	19.262	15.897	322.465
37	.2167	.310	66.16	81.93	.859	.752	-3.198	19.445	16.243	350.284
38	.2344	.335	67.10	81.75	.871	.763	-2.922	19.721	16.465	378.892
39	.2515	.360	67.91	81.35	.882	.785	-2.683	19.960	16.956	406.529
40	.2695	.385	68.52	81.09	.889	.800	-2.505	20.138	17.270	435.621
41	.2885	.410	69.17	81.09	.898	.800	-2.315	20.329	17.268	463.097
42	.3046	.435	69.70	80.78	.905	.818	-2.156	20.487	17.659	492.350
43	.3645	.521	71.68	80.07	.930	.858	-1.577	21.067	18.527	589.162
44	.4246	.607	73.24	79.64	.951	.883	-1.117	21.527	19.060	686.297
45	.4845	.693	74.41	79.27	.966	.915	-.775	21.869	19.754	783.109
46	.5445	.778	75.36	78.66	.978	.942	-.494	22.149	20.332	880.083
47	.6044	.864	76.11	78.27	.988	.960	-.272	22.371	20.732	976.895
48	.6646	.950	76.46	77.96	.993	.976	-.106	22.477	21.122	1074.191
49	.7245	1.036	76.83	77.87	.997	.983	-.062	22.581	21.226	1171.003
50	.7844	1.121	76.90	77.71	.996	.992	-.043	22.600	21.424	1267.615
51	.8444	1.207	76.96	77.66	.999	.995	-.024	22.619	21.482	1364.788
52	.9047	1.293	77.06	77.62	1.000	.998	.010	22.654	21.535	1462.247
53	.9644	1.379	77.06	77.61	1.000	.998	.004	22.648	21.554	1558.735
54	1.0246	1.465	77.01	77.59	1.000	.999	-.010	22.634	21.571	1656.032
55	1.0845	1.550	77.06	77.56	1.000	1.001	.005	22.649	21.613	1752.844
56	1.1445	1.636	77.06	77.55	1.000	1.000	.004	22.647	21.580	1849.817
57	1.2045	1.722	76.97	77.56	.999	1.000	-.021	22.623	21.589	1946.791
58	1.3642	1.979	76.96	77.52	.999	1.003	-.024	22.619	21.662	2237.226
59	1.5642	2.236	77.02	77.56	1.000	1.001	-.005	22.638	21.614	2528.147
60	1.7441	2.493	76.97	77.55	.999	1.002	-.020	22.623	21.623	2818.906
61	1.9242	2.750	76.86	77.50	.996	1.004	-.047	22.597	21.683	3109.968
62	2.1042	3.008	76.96	77.51	.999	1.004	-.026	22.618	21.669	3400.908
63	2.2841	3.265	76.96	77.51	.999	1.004	-.025	22.618	21.669	3691.667
64	2.4645	3.523	76.84	77.53	.997	1.003	-.059	22.584	21.648	3983.234
65	2.6445	3.780	76.84	77.54	.997	1.002	-.058	22.585	21.629	4274.154
66	2.8241	4.037	76.90	77.52	.998	1.003	-.043	22.600	21.656	4564.428
67	3.0044	4.294	76.86	77.53	.998	1.003	-.054	22.589	21.649	4855.633

Table 38.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 22. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	81.159	81.159
FREE STREAM TEMPERATURE =	77.860	
WALL TEMPERATURE =	95.430	
WALL HEAT FLUX =	.04840	
FREE STREAM DENSITY =	.07454	
FREE STREAM KINEMATIC VISCOSITY =	.0001659	
DENSITY OF FLUID AT WALL =	.07218	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001756	
WALL/FREE STREAM DENSITY RATIO =	.96835	
LOCATION REYNOLDS NUMBER (REX) =	2788689.44	
INPUT VALUE OF VELOCITY DELTA =	.91000	
INPUT VALUE OF TEMPERATURE DELTA =	.97000	
CALCULATED DELTA =		.73042
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.08443	.08472
MOMENTUM THICKNESS (THETA) =	.06060	.06065
ENERGY-DISSIPATION THICKNESS =	.10949	.10945
ENTHALPY THICKNESS =	.00383	.00383
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.39323	1.39695
SHAPE FACTOR 32 (ENERGY/THETA) =	1.80673	1.80460
MOMENTUM THICKNESS REYNOLDS NUMBER =	2470.63	2472.67
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	3442.16	3454.20
SKIN FRICTION COEFFICIENT =	.003776	
FRICTION VELOCITY =	3.58340	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		.05566
CLAUSERS 'DELTA' INTEGRAL =	-1.73866	-1.83220
CLAUSERS 'G' INTEGRAL =	9.93825	10.06549
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.07868	.08090
MOMENTUM THICKNESS - CONSTANT DENSITY =	.06122	.06127
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.28518	1.32024

LOCATION -X- 68.40000

Z = CENTERLINE

K = 0.2×10^{-6}

Table 39.

KLDM21X TAPE 4752R- FILES 66-88, RUN 1, PTS.1-22 10/15/80

RUN NO. 1. POINT 22. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0038	.005	26.92	91.63	.332	.216	-15.136	7.512	4.668	6.514
2	.0053	.007	28.23	90.83	.348	.262	-14.770	7.679	5.895	9.065
3	.0059	.008	30.26	90.51	.373	.280	-14.204	8.445	6.306	10.085
4	.0068	.009	33.37	90.03	.411	.307	-13.336	9.313	6.920	11.616
5	.0081	.011	37.17	89.43	.458	.341	-12.276	10.373	7.691	13.827
6	.0097	.013	40.93	88.93	.504	.370	-11.226	11.422	8.339	16.548
7	.0111	.015	42.87	88.60	.528	.389	-10.686	11.963	8.756	18.929
8	.0118	.016	43.66	88.46	.538	.396	-10.466	12.183	8.933	20.119
9	.0140	.019	46.14	88.16	.569	.414	-9.772	12.676	9.320	23.861
10	.0160	.022	47.83	87.86	.589	.430	-9.301	13.347	9.686	27.262
11	.0181	.025	49.09	87.49	.605	.452	-8.948	13.700	10.182	30.834
12	.0196	.027	49.85	87.42	.614	.456	-8.737	13.912	10.269	33.385
13	.0211	.029	50.55	87.34	.623	.461	-8.542	14.107	10.382	35.936
14	.0226	.031	51.12	87.11	.630	.473	-8.383	14.266	10.665	38.827
15	.0251	.034	51.72	86.79	.637	.492	-8.216	14.433	11.079	42.738
16	.0271	.037	52.30	86.63	.644	.501	-8.053	14.596	11.286	46.140
17	.0287	.039	52.85	86.55	.651	.505	-7.899	14.749	11.386	48.861
18	.0354	.049	54.54	86.18	.672	.526	-7.429	15.220	11.858	60.255
19	.0422	.058	55.68	85.99	.686	.537	-7.110	15.539	12.103	71.820
20	.0489	.067	56.96	85.84	.702	.546	-6.753	15.896	12.295	83.215
21	.0550	.075	57.74	85.58	.711	.561	-6.536	16.113	12.632	93.589
22	.0620	.085	58.73	85.33	.724	.575	-6.258	16.390	12.953	105.494
23	.0688	.094	59.53	85.00	.734	.594	-6.036	16.613	13.381	117.058
24	.0751	.103	60.14	84.81	.741	.604	-5.865	16.784	13.617	127.773
25	.0820	.112	60.86	84.71	.750	.610	-5.666	16.983	13.743	139.508
26	.0889	.122	61.60	84.65	.759	.613	-5.459	17.190	13.822	151.242
27	.0950	.130	62.07	84.43	.765	.626	-5.326	17.323	14.112	161.617
28	.1020	.140	62.72	84.27	.773	.635	-5.145	17.504	14.312	173.521
29	.1069	.146	63.42	84.17	.781	.641	-4.951	17.698	14.445	185.256
30	.1153	.158	63.82	83.99	.786	.651	-4.840	17.809	14.675	196.141
31	.1218	.167	64.43	83.93	.794	.655	-4.669	17.980	14.754	207.195
32	.1290	.177	64.76	83.84	.798	.659	-4.576	18.073	14.861	219.440
33	.1460	.200	66.03	83.60	.814	.673	-4.223	18.426	15.171	248.352
34	.1636	.224	67.12	83.32	.827	.689	-3.919	18.729	15.536	278.284
35	.1809	.248	68.09	83.17	.839	.698	-3.647	19.001	15.726	307.706
36	.1969	.272	69.12	82.76	.852	.720	-3.361	19.288	16.005	336.318
37	.2159	.296	69.89	82.46	.861	.738	-3.144	19.505	16.[illegible]	367.230
38	.2340	.320	70.91	82.25	.874	.750	-2.862	19.787	16.[illegible]	398.012
39	.2509	.344	71.41	82.08	.880	.760	-2.721	19.928	17.120	426.754
40	.2694	.369	72.16	81.80	.889	.776	-2.511	20.136	17.486	458.217
41	.2859	.391	72.90	81.58	.898	.788	-2.365	20.343	17.761	486.278
42	.3039	.416	73.48	81.49	.905	.794	-2.144	20.505	17.881	516.891
43	.3640	.498	75.31	80.65	.928	.841	-1.631	21.016	18.957	619.102
44	.4240	.581	76.98	80.14	.949	.870	-1.165	21.483	19.614	721.144
45	.4840	.663	78.26	79.53	.964	.905	-.808	21.841	20.386	823.165
46	.5430	.745	79.24	79.20	.976	.924	-.535	22.114	20.815	925.056
47	.6043	.827	79.98	78.72	.985	.951	-.330	22.319	21.429	1027.778
48	.6643	.910	80.41	78.39	.991	.970	-.208	22.441	21.849	1129.819
49	.7241	.991	80.82	78.32	.996	.974	-.093	22.555	21.939	1231.521
50	.7838	1.073	81.04	78.14	.999	.984	-.033	22.615	22.173	1333.052
51	.8439	1.155	81.17	78.16	1.000	.983	.003	22.652	22.153	1435.263
52	.9039	1.238	81.19	77.90	1.000	.998	.010	22.658	22.481	1537.305
53	.9639	1.320	81.19	77.87	1.000	.999	.008	22.657	22.517	1639.346
54	1.0238	1.402	81.15	77.87	1.000	1.000	-.002	22.647	22.524	1741.218
55	1.0841	1.484	81.14	77.86	1.000	1.000	-.006	22.643	22.531	1843.769
56	1.1440	1.566	81.21	77.85	1.001	1.001	.014	22.662	22.546	1945.640
57	1.2044	1.649	81.25	77.83	1.001	1.001	.026	22.674	22.567	2048.362
58	1.3837	1.894	81.26	77.83	1.002	1.002	.035	22.683	22.573	2353.296
59	1.5636	2.141	81.24	77.84	1.001	1.001	.023	22.672	22.566	2659.250
60	1.7437	2.387	81.17	77.85	1.000	1.001	.002	22.651	22.552	2965.544
61	1.9237	2.634	81.06	77.83	.999	1.001	-.029	22.626	22.567	3271.669
62	2.1036	2.880	81.07	77.82	.999	1.002	-.025	22.624	22.581	3577.623
63	2.2837	3.127	81.06	77.82	.999	1.002	-.029	22.620	22.580	3883.917
64	2.4539	3.373	81.00	77.86	.998	1.000	-.045	22.604	22.538	4190.381
65	2.6442	3.620	80.96	77.85	.998	1.001	-.056	22.593	22.552	4497.016
66	2.8236	3.866	81.00	77.85	.998	1.001	-.045	22.604	22.552	4802.120
67	3.0040	4.113	80.86	77.85	.997	1.000	-.078	22.571	22.545	5108.924

Table 39.

KLDN26C TAPE 4752R FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 4. GRID NO. 2

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	38.836	38.836
FREE STREAM TEMPERATURE	=	77.601	
WALL TEMPERATURE	=	117.660	
WALL HEAT FLUX	=	.04220	
FREE STREAM DENSITY	=	.07532	
FREE STREAM KINEMATIC VISCOSITY	=	.0001641	
DENSITY OF FLUID AT WALL	=	.07010	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001863	
WALL/FREE STREAM DENSITY RATIO	=	.93061	
LOCATION REYNOLDS NUMBER (REX)	=	2445956.21	
INPUT VALUE OF VELOCITY DELTA	=	.15000	
INPUT VALUE OF TEMPERATURE DELTA	=	.15000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.13100	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03079	.02442
MOMENTUM THICKNESS (THETA)	=	.01413	.01360
ENERGY-DISSIPATION THICKNESS	=	.02331	.02355
ENTHALPY THICKNESS	=	.00116	.00147
SHAPE FACTOR 12 (DELSTAR/THETA)	=	2.17898	1.79593
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.65008	1.73102
MOMENTUM THICKNESS REYNOLDS NUMBER	=	278.65	268.17
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	607.17	481.61
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS "DELTA" INTEGRAL	=	-.39969	-.36721
CLAUSERS "G" INTEGRAL	=	4.29078	2.54454
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02666	.02295
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01454	.01401
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.83264	1.63815

LOCATION -X- 12.40000

Z = CENTERLINE

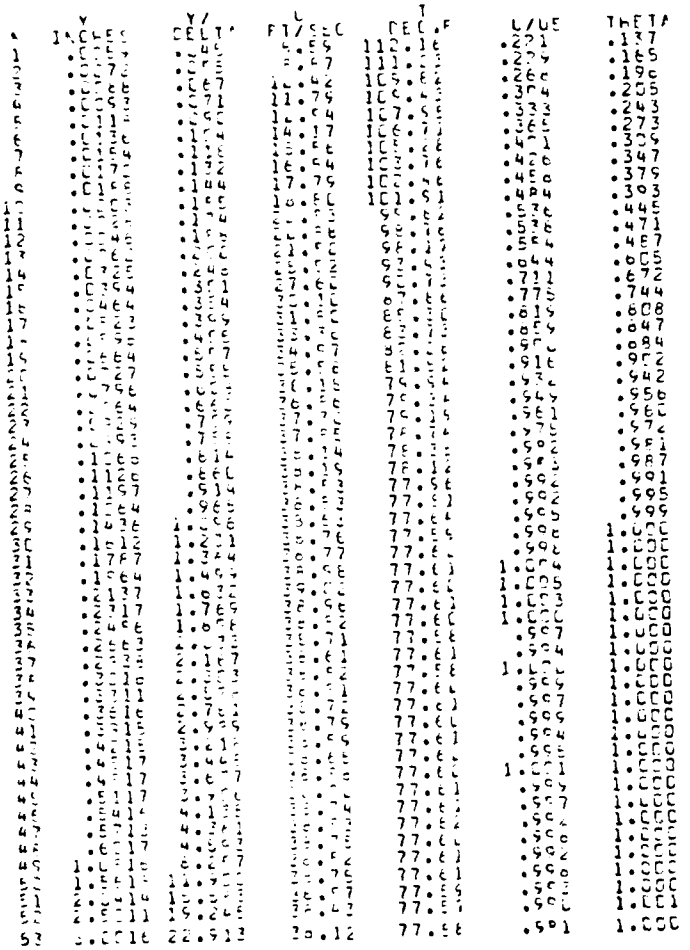
K = 0.75 X 10^{-6}

Table 40.

KLDR28C TAPE 47528 FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 4. GRID NO. 2

RADIAL PROFILE DATA



KLDK26C TAPE 47522 FILES 115-143, RUN 3, PTS.1-19 10/15/6C

PLN NO. 3. POINT 5. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y=.35
FREE STREAM VELOCITY =	38.739	38.339
FREE STREAM TEMPERATURE =	77.454	
WALL TEMPERATURE =	117.000	
WALL HEAT FLUX =	.042CC	
FREE STREAM DENSITY =	.07535	
FREE STREAM KINEMATIC VISCOSITY =	.0001640	
DENSITY OF FLUID AT WALL =	.07018	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001959	
WALL/FREE STREAM DENSITY RATIO =	.93134	
LOCATION REYNOLDS NUMBER (REX) =	2415844.26	
INPUT VALUE OF VELOCITY DELTA =	.15000	
INPUT VALUE OF TEMPERATURE DELTA =	.17000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.13100	
DISPLACEMENT THICKNESS (DELSTAR) =	.03286	.02593
MOMENTUM THICKNESS (THETA) =	.01421	.01421
ENERGY-DISSIPATION THICKNESS =	.02332	.02443
ENTHALPY THICKNESS =	.00115	.00148
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.31255	1.82504
SHAPE FACTOR 32 (ENERGY/THETA) =	1.64132	1.71953
MOMENTUM THICKNESS REYNOLDS NUMBER =	276.60	276.84
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	640.11	505.25
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS "DELTA" INTEGRAL =	-.49465	-.42660
CLAUSERS "C" INTEGRAL =	5.19152	2.97954
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03005	.02445
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01462	.01465
SHAPE FACTOR 12 - CONSTANT DENSITY =	2.05498	1.66956

LOCATION -X- 12.40000

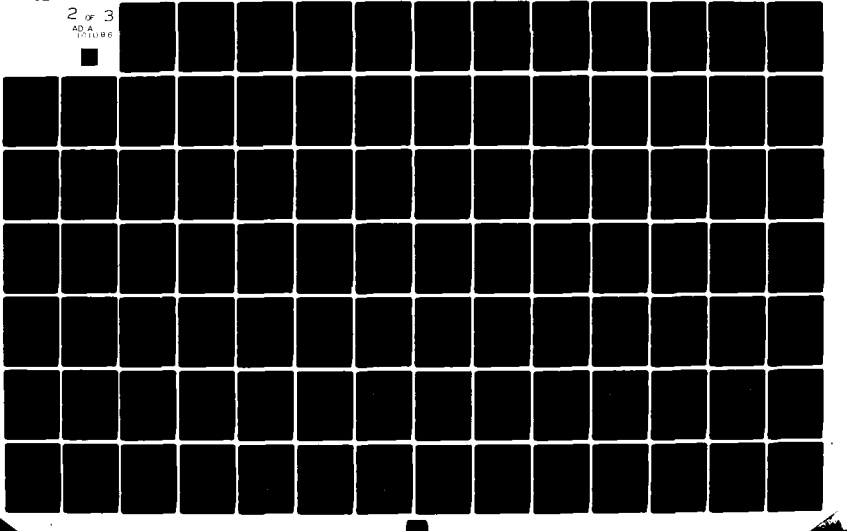
Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 41.

AD-A101 096 UNITED TECHNOLOGIES RESEARCH CENTER EAST HARTFORD CONN F/G 20/4
DATA REPORT. VOLUME II. VELOCITY AND TEMPERATURE PROFILE DATA F--ETC(U)
JAN 81 M F BLAIR F49620-78-C-0064
UNCLASSIFIED UTRC/R81-914388-16 AFOSR-TR-81-0515 NL

2 OF 3
AD A
101096



NLEW26C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 5. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0033	.025	2.72	113.47	.071	.089
2	.0042	.037	3.79	112.60	.096	.111
3	.0055	.042	5.84	112.06	.152	.125
4	.0066	.051	6.47	111.21	.169	.146
5	.0075	.057	6.86	110.55	.179	.160
6	.0092	.070	8.11	109.38	.212	.193
7	.0108	.083	10.37	108.15	.270	.222
8	.0116	.089	10.63	107.63	.277	.237
9	.0133	.102	12.53	106.55	.327	.264
10	.0159	.122	14.45	105.16	.377	.299
11	.0176	.135	15.56	103.84	.406	.332
12	.0191	.146	16.12	102.71	.421	.359
13	.0206	.157	16.75	101.42	.437	.394
14	.0227	.174	18.01	99.57	.470	.430
15	.0244	.186	19.95	99.32	.520	.441
16	.0263	.201	20.16	98.16	.526	.476
17	.0282	.215	21.61	97.06	.564	.504
18	.0340	.264	24.76	93.55	.646	.585
19	.0415	.317	27.40	90.41	.715	.672
20	.0485	.371	29.65	87.59	.773	.743
21	.0545	.416	31.20	85.36	.814	.799
22	.0610	.466	33.11	83.16	.864	.855
23	.0680	.524	34.14	80.26	.890	.877
24	.0744	.568	35.00	81.00	.910	.909
25	.0813	.622	35.70	79.80	.931	.940
26	.0884	.675	36.02	79.47	.943	.948
27	.0946	.722	36.53	78.93	.961	.961
28	.1016	.776	37.28	78.37	.972	.976
29	.1087	.830	37.56	78.17	.980	.981
30	.1146	.875	37.65	77.86	.990	.986
31	.1214	.927	38.02	77.68	.992	.993
32	.1257	.963	37.95	77.55	.997	.995
33	.1455	1.111	38.42	77.52	1.002	.997
34	.1632	1.246	38.23	77.43	.997	.999
35	.1806	1.379	38.24	77.43	.997	.999
36	.1984	1.515	38.54	77.39	1.005	1.000
37	.2155	1.645	38.19	77.35	.996	1.000
38	.2333	1.783	38.31	77.42	.999	1.000
39	.2507	1.914	38.29	77.41	.999	1.000
40	.2684	2.049	38.33	77.35	1.000	1.000
41	.2854	2.179	38.26	77.40	.998	1.000
42	.3036	2.318	38.30	77.35	.999	1.000
43	.3332	2.544	38.03	77.36	.997	1.001
44	.3635	2.775	38.19	77.39	.996	1.000
45	.3935	3.004	38.10	77.36	.994	1.001
46	.4235	3.236	38.05	77.39	.992	1.000
47	.4536	3.463	37.94	77.35	.990	1.000
48	.4834	3.690	38.21	77.39	.997	1.000
49	.5134	3.919	38.08	77.35	.993	1.000
50	.5434	4.148	38.29	77.35	.999	1.000
51	.5739	4.381	38.20	77.37	.996	1.001
52	.6034	4.606	38.16	77.37	.996	1.001
53	1.0835	8.271	37.93	77.35	.989	1.000
54	1.5635	11.935	38.13	77.36	.994	1.001
55	2.0434	15.599	38.21	77.37	.997	1.001
56	2.5231	19.261	37.93	77.37	.989	1.001
57	3.0035	22.928	37.91	77.36	.989	1.001

Table 41.

KLD-26C TAPE 47528 FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 6. GRID NO. 2

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y=.3E
FREE STREAM VELOCITY	=	38.517	38.517
FREE STREAM TEMPERATURE	=	76.773	
WALL TEMPERATURE	=	115.070	
WALL HEAT FLUX	=	.04130	
FREE STREAM DENSITY	=	.07574	
FREE STREAM KINEMATIC VISCOSITY	=	.0001630	
DENSITY OF FLUID AT WALL	=	.07069	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001841	
WALL/FREE STREAM DENSITY RATIO	=	.93337	
LOCATION REYNOLDS NUMBER (REX)	=	244171.66	
INPUT VALUE OF VELOCITY DELTA	=	.15000	
INPUT VALUE OF TEMPERATURE DELTA	=	.17000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.13200	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03006	.02391
MOMENTUM THICKNESS (THETA)	=	.01351	.01316
ENERGY-DISSIPATION THICKNESS	=	.02219	.02269
ENTHALPY THICKNESS	=	.00113	.00142
SHAPE FACTOR 12 (DELSTAR/THETA)	=	2.22516	1.81634
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.64292	1.72423
MOMENTUM THICKNESS REYNOLDS NUMBER	=	266.01	259.16
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	591.91	470.73
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.39099	-.37898
CLAUSERS 'G' INTEGRAL	=	4.26688	2.53454
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02606	.02249
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01391	.01356
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.87395	1.65770

LOCATION -Y- 12.40000

Z = -6 INCHES

K = 0.75 X 10^{-6}

Table 42.

KLEBZEC TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 6. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0057	.043	7.92	110.35	.203	.123
2	.0066	.050	8.78	109.25	.226	.152
3	.0076	.058	9.80	108.55	.255	.170
4	.0092	.070	10.07	107.55	.261	.195
5	.0109	.083	12.56	106.35	.326	.226
6	.0116	.088	12.71	105.62	.330	.242
7	.0139	.106	14.39	104.15	.374	.285
8	.0156	.118	15.04	103.23	.391	.309
9	.0175	.133	16.60	102.00	.431	.341
10	.0191	.145	18.09	100.46	.470	.382
11	.0206	.156	18.44	99.50	.479	.406
12	.0223	.169	19.35	98.44	.503	.434
13	.0247	.187	20.86	96.65	.542	.475
14	.0269	.204	22.14	95.67	.575	.507
15	.0281	.213	22.94	95.08	.595	.522
16	.0344	.261	25.74	92.08	.668	.600
17	.0418	.317	29.25	88.52	.759	.693
18	.0488	.370	31.86	86.06	.821	.757
19	.0546	.414	32.35	84.25	.840	.805
20	.0614	.465	33.73	82.57	.876	.849
21	.0685	.519	35.04	80.95	.910	.891
22	.0747	.566	35.80	79.62	.930	.926
23	.0814	.617	36.74	78.59	.954	.953
24	.0883	.669	37.33	78.35	.970	.959
25	.0949	.719	37.34	77.59	.969	.968
26	.1015	.769	37.70	77.61	.979	.977
27	.1084	.821	38.09	77.43	.989	.983
28	.1146	.868	38.36	77.27	.993	.987
29	.1216	.921	38.20	76.93	.992	.996
30	.1287	.975	38.25	77.01	.993	.994
31	.1457	1.104	38.49	76.82	.999	.999
32	.1631	1.236	38.49	76.77	.999	1.000
33	.1803	1.366	38.47	76.77	.999	1.000
34	.1983	1.502	38.59	76.77	1.002	1.000
35	.2155	1.633	38.57	76.77	1.001	1.000
36	.2337	1.771	38.49	76.77	.999	1.000
37	.2505	1.898	38.57	76.76	1.001	1.000
38	.2686	2.035	38.64	76.77	1.004	1.000
39	.2856	2.164	38.32	76.76	.995	1.000
40	.3034	2.299	38.68	76.73	1.004	1.001
41	.3332	2.524	38.58	76.76	1.002	1.000
42	.3637	2.756	38.66	76.73	1.004	1.001
43	.3938	2.983	38.36	76.74	.996	1.001
44	.4234	3.208	38.47	76.75	.999	1.001
45	.4533	3.474	38.36	76.76	.996	1.000
46	.4833	3.662	38.38	76.73	.996	1.001
47	.5139	3.893	38.40	76.73	.997	1.000
48	.5437	4.120	38.46	76.77	.999	1.000
49	.5739	4.348	38.45	76.77	.998	1.000
50	.6035	4.572	38.31	76.76	.992	1.000
51	1.0035	8.279	38.40	76.75	.997	1.001
52	1.5633	11.843	38.24	76.75	.993	1.001
53	2.0436	15.482	38.09	76.77	.989	1.000
54	2.5332	19.118	38.26	76.75	.994	1.001
55	3.0036	22.755	38.17	76.76	.991	1.000

Table 42.

KLD626C TAPE 47528 FILES 115-143, RUN 3, PTS.1-19 10/15/80

PLN NO. 3. POINT 7. GRID NO. 2

BOUNDARY LAYER PROPERTIES	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	41.243	41.243
FREE STREAM TEMPERATURE =	77.398	
WALL TEMPERATURE =	119.640	
WALL HEAT FLUX =	.04200	
FREE STREAM DENSITY =	.07565	
FREE STREAM KINEMATIC VISCOSITY =	.0001632	
DENSITY OF FLUID AT WALL =	.07013	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001867	
WALL/FREE STREAM DENSITY RATIO =	.92708	
LOCATION REYNOLDS NUMBER (REX) =	3456786.46	
INPUT VALUE OF VELOCITY DELTA =	.19000	
INPUT VALUE OF TEMPERATURE DELTA =	.21000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.14000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03245	.02628
MOMENTUM THICKNESS (THETA) =	.01472	.01449
ENERGY-DISSIPATION THICKNESS =	.02432	.02586
ENTHALPY THICKNESS =	.00156	.00190
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.20529	1.81379
SHAPE FACTOR 32 (ENERGY/THETA) =	1.65241	1.72914
MOMENTUM THICKNESS REYNOLDS NUMBER =	309.63	304.92
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	682.83	553.06
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS "DELTA" INTEGRAL =	-.44814	-.41924
CLAUSERS "G" INTEGRAL =	4.63153	2.77190
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02848	.02458
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01522	.01501
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.87025	1.62483

LOCATION -X- 16.40000

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 43.

KLDW26C TAPE 4752H FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 7. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0045	.024	7.66	116.09	.186	.084
2	.0066	.049	9.59	114.70	.225	.117
3	.0085	.061	10.71	113.66	.260	.142
4	.0110	.079	11.98	111.93	.290	.183
5	.0135	.097	13.79	111.04	.334	.204
6	.0137	.098	14.73	109.55	.345	.229
7	.0157	.112	16.43	108.57	.388	.253
8	.0172	.125	17.79	106.90	.426	.302
9	.0194	.139	18.73	105.82	.455	.327
10	.0211	.151	19.06	105.04	.462	.346
11	.0270	.195	23.66	101.33	.571	.433
12	.0344	.246	27.14	97.55	.656	.523
13	.0414	.296	29.92	93.54	.723	.608
14	.0474	.340	31.94	90.51	.775	.680
15	.0550	.394	34.01	87.38	.822	.750
16	.0617	.441	35.71	85.67	.866	.804
17	.0679	.486	36.66	84.13	.888	.841
18	.0747	.534	37.77	82.64	.916	.871
19	.0814	.582	38.79	81.01	.941	.900
20	.0877	.627	39.06	80.46	.946	.928
21	.0947	.677	39.39	79.57	.955	.949
22	.1013	.725	39.77	79.36	.964	.953
23	.1073	.767	40.22	79.04	.970	.961
24	.1149	.819	40.19	78.53	.975	.971
25	.1217	.869	40.60	78.33	.984	.978
26	.1355	.969	41.06	77.90	.995	.988
27	.1563	1.115	41.36	77.70	1.000	.993
28	.1745	1.246	40.88	77.52	.991	.997
29	.1914	1.367	41.15	77.41	.996	1.000
30	.2087	1.491	41.24	77.38	1.000	1.000
31	.2263	1.617	41.34	77.39	1.004	1.000
32	.2438	1.742	41.34	77.41	1.002	1.000
33	.2612	1.867	41.48	77.40	1.006	1.000
34	.2787	1.991	41.39	77.36	1.004	1.001
35	.2965	2.118	41.53	77.37	1.007	1.001
36	.3266	2.330	41.40	77.36	1.004	1.000
37	.3564	2.546	41.31	77.36	1.002	1.001
38	.3866	2.701	41.57	77.36	1.008	1.001
39	.4166	2.975	41.19	77.37	.999	1.001
40	.4466	3.192	41.32	77.37	1.002	1.001
41	.4766	3.402	41.10	77.38	.996	1.000
42	.5066	3.617	41.30	77.38	1.001	1.000
43	.5365	3.832	41.26	77.38	1.001	1.000
44	.5666	4.047	41.37	77.37	1.002	1.001
45	.5967	4.262	41.18	77.36	.996	1.001
46	1.0767	7.691	41.30	77.35	1.001	1.000
47	1.5563	11.117	41.32	77.35	1.001	1.000
48	2.0368	14.547	41.09	77.36	.996	1.000
49	2.5161	17.972	41.06	77.36	.996	1.000
50	2.9963	21.402	41.01	77.37	.994	1.001

Table 43.

RUN 26C TAPE 4752R FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 9. GRID NO. 2

BOUNDARY LAYER PROPERTIES

		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	44.665	44.665
FREE STREAM TEMPERATURE	=	77.722	
WALL TEMPERATURE	=	121.250	
WALL HEAT FLUX	=	.04160	
FREE STREAM DENSITY	=	.07560	
FREE STREAM KINEMATIC VISCOSITY	=	.0001635	
DENSITY OF FLUID AT WALL	=	.06994	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001876	
WALL/FREE STREAM DENSITY RATIO	=	.92507	
LOCATION REYNOLDS NUMBER (REX)	=	4645652.2	
INPUT VALUE OF VELOCITY DELTA	=	.21000	
INPUT VALUE OF TEMPERATURE DELTA	=	.26000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.18500	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03364	.02797
MOMENTUM THICKNESS (THETA)	=	.01600	.01579
ENERGY-DISSIPATION THICKNESS	=	.02674	.02743
ENTHALPY THICKNESS	=	.00174	.00205
SHAPE FACTOR 12 (DELSTAR/THETA)	=	2.10161	1.77146
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.67047	1.73727
MOMENTUM THICKNESS REYNOLDS NUMBER	=	364.47	359.50
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	766.64	636.84
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.46604	-.45446
CLAUSERS 'C' INTEGRAL	=	4.72634	2.95110
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02925	.02592
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01654	.01632
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.76861	1.58851

LOCATION -X- 20.40000

Z = -6 INCHES

K = 0.75 X 10^{-6}

Table 44.

KLC4260 TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 9. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.029	10.45	115.29	.234	.137
2	.0063	.034	10.53	114.30	.236	.160
3	.0081	.044	12.46	113.19	.279	.185
4	.0098	.053	13.07	112.02	.292	.212
5	.0103	.056	12.93	111.62	.289	.221
6	.0125	.068	15.51	110.49	.347	.247
7	.0145	.079	16.88	108.53	.376	.293
8	.0164	.089	18.53	107.70	.415	.311
9	.0182	.099	19.88	107.45	.445	.318
10	.0195	.106	19.98	106.62	.445	.336
11	.0213	.115	21.81	105.23	.486	.366
12	.0234	.127	22.93	103.16	.513	.415
13	.0254	.137	24.37	102.75	.545	.424
14	.0271	.147	25.31	101.95	.566	.443
15	.0335	.181	28.74	97.81	.643	.536
16	.0403	.218	31.62	94.54	.706	.611
17	.0476	.257	34.36	91.73	.769	.676
18	.0537	.290	35.96	89.33	.805	.729
19	.0604	.327	38.15	87.43	.852	.777
20	.0674	.364	39.34	85.73	.876	.816
21	.0737	.399	40.06	84.04	.897	.855
22	.0804	.435	40.96	82.58	.914	.879
23	.0873	.472	41.42	82.15	.927	.898
24	.0935	.506	41.95	81.70	.939	.909
25	.1007	.544	42.37	80.65	.951	.933
26	.1076	.582	42.97	80.16	.962	.943
27	.1135	.614	43.53	79.65	.961	.951
28	.1205	.652	43.87	79.25	.982	.965
29	.1273	.688	43.77	78.93	.979	.972
30	.1445	.781	44.19	78.36	.989	.985
31	.1622	.877	44.79	78.33	.993	.986
32	.1795	.970	44.51	78.11	.996	.991
33	.1977	1.069	44.62	77.95	.999	.995
34	.2144	1.159	44.64	77.88	.999	.996
35	.2323	1.256	44.60	77.80	.998	.998
36	.2497	1.350	44.91	77.76	1.003	.999
37	.2676	1.447	44.84	77.73	1.003	1.000
38	.2846	1.539	44.31	77.73	.992	.999
39	.3026	1.636	44.56	77.69	.997	1.001
40	.3322	1.796	44.76	77.70	1.002	1.000
41	.3627	1.961	44.72	77.66	1.001	1.001
42	.3924	2.121	44.50	77.66	.996	1.001
43	.4224	2.283	44.57	77.67	.998	1.001
44	.4525	2.446	44.46	77.67	.995	1.001
45	.4826	2.609	44.50	77.67	.996	1.001
46	.5126	2.771	44.55	77.67	.997	1.001
47	.5424	2.932	44.63	77.67	.999	1.001
48	.5726	3.095	44.56	77.65	.996	1.002
49	.6026	3.257	44.73	77.64	1.001	1.002
50	1.0425	5.652	44.50	77.64	.994	1.002
51	1.5625	8.446	44.44	77.64	.995	1.002
52	2.0425	11.041	44.91	77.63	.996	1.002
53	2.5221	13.633	44.41	77.64	.994	1.002
54	3.0026	16.230	44.36	77.63	.990	1.002

Table 44.

KLC-26C TAPE 47526 FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 10. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y=.35
FREE STREAM VELOCITY =	44.312	44.342
FREE STREAM TEMPERATURE =	77.645	
WALL TEMPERATURE =	121.170	
WALL HEAT FLUX =	.04100	
FREE STREAM DENSITY =	.07561	
FREE STREAM KINEMATIC VISCOSITY =	.0001635	
DENSITY OF FLUID AT WALL =	.06995	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001875	
WALL/FREE STREAM DENSITY RATIO =	.92507	
LOCATION REYNOLDS NUMBER (REX) =	4606000.94	
INPUT VALUE OF VELOCITY DELTA =	.17000	
INPUT VALUE OF TEMPERATURE DELTA =	.22000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.16500	
DISPLACEMENT THICKNESS (DELSTAR) =	.03128	.02617
MOMENTUM THICKNESS (THETA) =	.01485	.01459
ENERGY-DISSIPATION THICKNESS =	.02458	.02536
ENTHALPY THICKNESS =	.00174	.00203
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.10695	1.79376
SHAPE FACTOR 32 (ENERGY/THETA) =	1.67564	1.73820
MOMENTUM THICKNESS REYNOLDS NUMBER =	335.40	329.52
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	706.67	591.08
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.42066	-.42101
CLAUSERS 'G' INTEGRAL =	4.31757	2.74999
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02685	.02416
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01536	.01510
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.74797	1.59959

LOCATION -Y- 20.40000

Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 45.

[illegible] TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 10. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0054	.033	9.62	114.73	.217	.146
2	.0065	.040	10.88	113.66	.245	.168
3	.0073	.044	11.94	113.62	.267	.173
4	.0092	.056	13.70	113.03	.309	.187
5	.0106	.064	14.26	111.69	.322	.218
6	.0113	.069	15.28	111.04	.345	.233
7	.0135	.082	17.36	109.52	.392	.258
8	.0155	.094	18.99	109.26	.429	.273
9	.0176	.107	20.65	106.73	.466	.331
10	.0192	.117	21.86	106.34	.493	.341
11	.0204	.124	22.46	104.53	.507	.373
12	.0224	.136	23.96	103.43	.541	.408
13	.0246	.149	25.40	102.74	.573	.423
14	.0267	.162	26.36	101.62	.595	.445
15	.0281	.170	27.29	101.06	.616	.462
16	.0344	.209	30.24	97.32	.682	.548
17	.0415	.252	33.32	94.10	.752	.622
18	.0484	.294	35.32	91.43	.797	.683
19	.0545	.330	36.64	88.96	.827	.740
20	.0617	.374	38.51	86.36	.869	.800
21	.0686	.416	39.61	84.65	.894	.836
22	.0745	.452	40.19	83.69	.907	.861
23	.0815	.494	41.14	82.30	.928	.893
24	.0885	.537	41.89	81.38	.945	.910
25	.0947	.574	42.28	81.16	.954	.919
26	.1016	.616	42.46	80.63	.959	.931
27	.1084	.657	42.93	79.67	.969	.954
28	.1146	.695	43.06	79.02	.972	.969
29	.1217	.738	43.37	79.01	.979	.969
30	.1283	.778	43.75	78.96	.987	.969
31	.1456	.883	43.99	78.20	.993	.987
32	.1631	.989	44.37	78.23	1.001	.987
33	.1803	1.093	44.24	77.85	.996	.995
34	.1984	1.203	44.20	77.70	.996	.999
35	.2154	1.306	44.55	77.64	1.005	1.000
36	.2336	1.416	44.39	77.66	1.002	1.000
37	.2505	1.518	44.41	77.65	1.002	1.000
38	.2684	1.627	44.27	77.63	.999	1.000
39	.2856	1.731	44.47	77.62	1.004	1.001
40	.3034	1.839	44.32	77.62	.996	1.001
41	.3332	2.020	44.20	77.60	.997	1.001
42	.3634	2.203	44.22	77.59	.998	1.001
43	.3934	2.384	44.26	77.59	.999	1.001
44	.4233	2.566	44.51	77.59	1.004	1.001
45	.4535	2.749	44.72	77.59	1.000	1.001
46	.4837	2.932	44.61	77.60	1.007	1.001
47	.5137	3.114	44.36	77.59	1.001	1.001
48	.5434	3.294	44.13	77.56	.996	1.001
49	.5735	3.476	44.44	77.60	1.003	1.001
50	.6033	3.657	44.50	77.60	1.004	1.001
51	1.0836	6.567	44.27	77.60	.999	1.001
52	1.5633	9.475	44.36	77.61	.999	1.001
53	2.0436	12.386	44.24	77.59	.996	1.001
54	2.5236	15.292	44.01	77.57	.993	1.002
55	3.0035	18.203	44.16	77.56	.997	1.001

Table 45.

KLD-26C TAPE 47528 FILES 115-143, RUN 5, PTS.1-19 10/15/80

RUN NO. 3. POINT 11. GRID NO. 3

BOUNDARY LAYER PROPERTIES

		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	48.062	48.062
FREE STREAM TEMPERATURE	=	76.274	
WALL TEMPERATURE	=	116.970	
WALL HEAT FLUX	=	.04190	
FREE STREAM DENSITY	=	.07460	
FREE STREAM KINEMATIC VISCOSITY	=	.0001653	
DENSITY OF FLUID AT WALL	=	.06931	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001962	
WALL/FREE STREAM DENSITY RATIO	=	.92908	
LOCATION REYNOLDS NUMBER (REX)	=	5962360.68	
INPUT VALUE OF VELOCITY DELTA	=	.21000	
INPUT VALUE OF TEMPERATURE DELTA	=	.28000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.18500	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03117	.02687
MOMENTUM THICKNESS (THETA)	=	.01659	.01546
ENERGY-DISSIPATION THICKNESS	=	.02652	.02675
ENTHALPY THICKNESS	=	.00305	.00269
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.99889	1.75871
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.70076	1.75353
MOMENTUM THICKNESS REYNOLDS NUMBER	=	377.30	369.14
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	754.18	649.20
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS "DELTA" INTEGRAL	=	-.41966	-.43366
CLAUSERS "G" INTEGRAL	=	4.05580	2.73675
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02444	.02487
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01613	.01579
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.63585	1.55657

LOCATION -X- 24.40000

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 46.

NLD=26C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 11. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0054	.029	12.81	113.09	.267	.095
2	[illegible]	.037	13.99	111.35	.292	.136
3	.0079	.043	15.16	110.53	.316	.157
4	.0091	.049	16.72	110.25	.340	.164
5	.0107	.058	17.43	109.56	.363	.181
6	.0114	.062	18.62	108.69	.392	.198
7	.0137	.074	20.66	108.35	.430	.211
8	.0154	.083	21.96	106.67	.458	.252
9	.0177	.096	23.83	104.32	.497	.309
10	.0192	.104	24.90	104.67	.519	.301
11	.0208	.113	26.10	103.22	.544	.336
12	.0224	.121	27.04	102.61	.563	.346
13	.0246	.133	28.32	101.55	.590	.377
14	.0266	.144	29.80	99.98	.621	.416
15	.0281	.152	30.70	98.98	.639	.440
16	.0345	.187	33.66	96.52	.701	.500
17	.0413	.223	36.74	94.24	.765	.556
18	.0487	.263	38.75	90.06	.806	.657
19	.0546	.295	40.34	87.59	.840	.719
20	.0614	.332	41.77	86.62	.870	.742
21	.0684	.370	42.49	85.36	.885	.773
22	.0743	.402	43.39	83.46	.904	.819
23	.0813	.440	44.71	82.36	.923	.846
24	[illegible]	.480	45.21	81.85	.942	.859
25	.0947	.510	45.22	80.70	.942	.887
26	.1015	.549	45.78	79.43	.954	.918
27	.1085	.587	46.17	79.06	.962	.927
28	.1145	.619	46.54	78.75	.969	.934
29	.1215	.657	46.65	78.10	.972	.950
30	.1287	.696	46.86	77.47	.977	.966
31	.1458	.788	47.34	77.45	.986	.966
32	.1631	.882	47.50	76.86	.990	.981
33	.1806	.976	47.83	76.70	.996	.985
34	.1987	1.074	47.84	76.37	.997	.993
35	.2156	1.166	47.94	76.39	.997	.992
36	.2333	1.261	48.04	76.43	1.001	.991
37	.2506	1.355	48.12	76.24	1.003	.996
38	.2684	1.451	48.07	76.16	1.001	.996
39	.2857	1.544	48.04	76.13	1.001	.999
40	.3037	1.642	48.00	76.09	1.000	1.000
41	.3331	1.801	48.72	76.[illegible]	1.007	1.001
42	.3637	1.966	47.97	76.[illegible]	.999	1.001
43	[illegible]	2.126	48.12	76.04	1.002	1.001
44	[illegible]	2.290	[illegible]	76.05	1.002	1.001
45	.4537	2.453	48.13	76.05	1.003	1.000
46	[illegible]	2.615	47.83	76.06	.996	1.000
47	.5136	2.776	48.17	76.07	1.003	1.000
48	[illegible]	2.940	47.90	76.07	.998	1.000
49	.5736	3.101	48.03	76.07	1.001	1.000
50	[illegible]	3.261	47.95	76.07	.999	1.000
51	[illegible]	5.859	47.91	76.05	.998	1.000
52	1.5635	8.452	47.74	76.07	.995	1.000
53	2.0436	11.047	47.79	76.07	.996	1.000
54	2.5232	13.639	47.75	76.05	.995	1.000
55	3.0036	16.276	47.83	76.05	.996	1.001

Table 46.

RLCR26C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 12. GRID NO. 1

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y=.39
FREE STREAM VELOCITY =	51.445	51.445
FREE STREAM TEMPERATURE =	76.141	
WALL TEMPERATURE =	113.460	
WALL HEAT FLUX =	.04256	
FREE STREAM DENSITY =	.07469	
FREE STREAM KINEMATIC VISCOSITY =	.0001654	
DENSITY OF FLUID AT WALL =	.06973	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001862	
WALL/FREE STREAM DENSITY RATIO =	.93369	
LOCATION REYNOLDS NUMBER (REX) =	736279.71	
INPUT VALUE OF VELOCITY DELTA =	.22000	
INPUT VALUE OF TEMPERATURE DELTA =	.09000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03244	.02800
MOMENTUM THICKNESS (THETA) =	.01673	.01608
ENERGY-DISSIPATION THICKNESS =	.02874	.02929
ENTHALPY THICKNESS =	.00225	.00244
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.93879	1.72628
SHAPE FACTOR 32 (ENERGY/THETA) =	1.71767	1.75560
MOMENTUM THICKNESS REYNOLDS NUMBER =	433.76	432.55
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	840.95	746.70
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.45206	-.47936
CLAUSERS 'G' INTEGRAL =	4.27919	3.05367
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02757	.02641
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01729	.01720
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.59970	1.53518

LOCATION -X- 28.40000

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 47.

KLE62EC TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 12. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.024	13.76	109.92	.260	.095
2	.0068	.031	14.14	108.45	.275	.134
3	.0075	.034	15.40	108.15	.299	.142
4	.0084	.038	16.23	107.88	.316	.150
5	.0098	.045	17.29	106.67	.336	.182
6	.0112	.051	19.76	105.50	.384	.213
7	.0127	.058	21.38	104.25	.416	.246
8	.0134	.061	22.26	103.69	.435	.262
9	.0154	.070	24.41	103.85	.475	.256
10	.0176	.080	26.61	102.60	.517	.291
11	.0193	.088	27.75	101.96	.532	.308
12	.0211	.096	29.35	102.04	.571	.306
13	.0225	.103	29.91	100.73	.581	.342
14	.0243	.111	30.72	100.24	.597	.360
15	.0264	.121	32.74	99.27	.636	.380
16	.0284	.130	33.26	97.70	.647	.422
17	.0302	.138	34.78	96.06	.676	.466
18	.0364	.166	37.06	93.87	.721	.525
19	.0438	.199	39.73	91.64	.772	.595
20	.0504	.230	42.10	89.75	.816	.635
21	.0567	.259	43.25	88.14	.841	.679
22	.0675	.290	44.33	86.62	.862	.719
23	.0706	.322	45.47	85.44	.884	.751
24	.0767	.350	46.62	84.69	.906	.765
25	.0833	.380	47.23	83.30	.914	.808
26	.0904	.412	47.77	81.84	.929	.847
27	.0966	.441	48.71	81.46	.939	.857
28	.1035	.472	48.60	80.60	.945	.875
29	.1106	.505	49.16	79.05	.956	.922
30	.1164	.531	49.06	79.53	.954	.909
31	.1234	.562	49.61	79.40	.964	.913
32	.1306	.596	50.16	78.51	.975	.926
33	.1474	.672	50.44	78.51	.980	.936
34	.1652	.754	50.70	77.86	.986	.954
35	.1826	.833	50.86	77.58	.984	.961
36	.2003	.914	51.05	77.00	.994	.977
37	.2176	.992	51.35	76.81	.996	.982
38	.2357	1.075	51.23	76.59	.996	.988
39	.2526	1.152	51.64	76.44	1.004	.992
40	.2706	1.234	51.46	76.45	1.000	.992
41	.2877	1.312	51.44	76.16	1.000	1.000
42	.3056	1.394	51.43	76.20	1.000	.998
43	.3251	1.555	51.35	76.14	.996	1.000
44	.3653	1.666	51.48	76.06	1.001	1.002
45	.3885	1.774	51.64	76.09	1.004	1.001
46	.4284	1.940	51.76	76.05	.996	1.003
47	.4585	2.077	51.67	76.04	1.004	1.003
48	.4857	2.215	51.36	76.04	.999	1.003
49	.5157	2.352	51.40	76.04	.999	1.003
50	.5456	2.485	51.73	76.03	.998	1.003
51	.5756	2.625	51.38	76.04	.999	1.003
52	.6054	2.761	51.26	76.04	.999	1.003
53	1.0357	4.951	51.24	76.04	.996	1.003
54	1.5656	7.140	51.25	76.06	.996	1.002
55	2.0456	9.329	51.10	76.05	.993	1.002
56	2.5351	11.515	50.96	76.01	.994	1.002
57	3.0355	13.706	51.02	76.05	.996	1.002

Table 47.

KLDW26C TAPE 4752R FILES 115-143, RUN 3, PTS.1-19 10/15/8C

RUN NO. 3. POINT 13. GRID NO. 7

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y=.35
FREE STREAM VELOCITY =	51.230	51.230
FREE STREAM TEMPERATURE =	76.276	
WALL TEMPERATURE =	114.550	
WALL HEAT FLUX =	.04320	
FREE STREAM DENSITY =	.07457	
FREE STREAM KINEMATIC VISCOSITY =	.0001654	
DENSITY OF FLUID AT WALL =	.06960	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001966	
WALL/FREE STREAM DENSITY RATIO =	.93335	
LOCATION REYNOLDS NUMBER (REX) =	732661.46	
INPUT VALUE OF VELOCITY DELTA =	.24000	
INPUT VALUE OF TEMPERATURE DELTA =	.31000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03302	.02960
MOMENTUM THICKNESS (THETA) =	.01661	.01679
ENERGY-DISSIPATION THICKNESS =	.02980	.02946
ENTHALPY THICKNESS =	.00219	.00241
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.96444	1.72781
SHAPE FACTOR 22 (ENERGY/THETA) =	1.71321	1.75509
MOMENTUM THICKNESS REYNOLDS NUMBER =	433.74	433.15
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	862.05	748.41
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.46252	-.46252
CLAUSERS 'C' INTEGRAL =	4.44074	3.05457
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02920	.02662
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01733	.01732
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.62702	1.53744

LOCATION -X- 28.40000

Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 48.

KLEB26C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 13. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.024	12.06	109.51	.235	.121
2	.0066	.030	12.86	109.38	.251	.143
3	.0074	.033	14.56	107.65	.284	.180
4	.0083	.037	15.54	106.70	.303	.205
5	.0096	.043	17.64	106.57	.344	.198
6	.0112	.050	19.00	106.50	.371	.210
7	.0126	.056	20.51	105.34	.400	.241
8	.0133	.059	21.83	105.03	.426	.249
9	.0154	.069	23.16	103.56	.452	.287
10	.0175	.078	25.14	103.59	.491	.286
11	.0197	.088	27.02	101.71	.527	.335
12	.0212	.095	27.63	100.22	.539	.375
13	.0226	.101	29.14	100.61	.569	.364
14	.0243	.108	30.74	99.19	.590	.401
15	.0265	.120	31.51	99.96	.615	.381
16	.0285	.127	33.10	100.42	.646	.369
17	.0301	.134	33.34	99.61	.651	.390
18	.0366	.164	36.79	94.54	.716	.523
19	.0436	.195	39.20	92.35	.765	.590
20	.0505	.225	41.79	90.34	.816	.633
21	.0563	.251	42.97	88.76	.839	.673
22	.0636	.284	44.37	86.64	.866	.729
23	.0709	.316	45.61	84.75	.890	.779
24	.0763	.340	46.16	83.38	.901	.814
25	.0835	.372	47.07	82.36	.919	.841
26	.0906	.404	47.86	82.03	.934	.850
27	.0967	.431	48.14	81.30	.940	.869
28	.1037	.462	48.64	81.02	.950	.876
29	.1106	.493	49.01	80.05	.957	.901
30	.1167	.520	49.06	79.76	.958	.909
31	.1234	.550	49.58	79.60	.968	.908
32	.1306	.582	49.77	78.97	.972	.930
33	.1476	.658	50.15	78.05	.979	.954
34	.1651	.736	50.39	77.76	.984	.961
35	.1827	.815	50.76	77.41	.991	.970
36	.2007	.895	50.82	76.83	.992	.985
37	.2176	.970	50.89	76.90	.993	.982
38	.2355	1.051	51.03	76.66	.996	.990
39	.2526	1.126	51.03	76.44	1.000	.996
40	.2706	1.207	51.07	76.59	1.001	.992
41	.2877	1.283	51.19	76.43	.999	.998
42	.3056	1.363	51.21	76.32	1.000	.999
43	.3362	1.499	51.16	76.28	.999	1.000
44	.3655	1.630	51.26	76.28	1.001	1.000
45	.3957	1.764	51.27	76.27	1.001	1.000
46	.4253	1.896	51.35	76.20	1.002	1.000
47	.4556	2.031	51.33	76.23	1.002	1.001
48	.4855	2.165	51.16	76.26	.999	1.000
49	.5157	2.299	50.93	76.24	.994	1.001
50	.5456	2.433	51.10	76.24	.997	1.001
51	.5754	2.566	51.28	76.24	1.001	1.001
52	.6054	2.699	51.17	76.23	.999	1.001
53	1.0457	4.641	51.00	76.27	.999	1.000
54	1.5556	6.935	50.95	76.24	.995	1.001
55	2.0456	9.120	51.01	76.24	.996	1.001
56	2.5352	11.295	50.95	76.20	.994	1.002
57	3.0054	13.400	50.92	76.19	.992	1.002

Table 18.

KLDN26C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 14. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	50.625	50.625
FREE STREAM TEMPERATURE =	76.124	
WALL TEMPERATURE =	114.796	
WALL HEAT FLUX =	.04210	
FREE STREAM DENSITY =	.07459	
FREE STREAM KINEMATIC VISCOSITY =	.0001654	
DENSITY OF FLUID AT WALL =	.06957	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001870	
WALL/FREE STREAM DENSITY RATIO =	.93269	
LOCATION REYNOLDS NUMBER (REX) =	724579.80	
INPUT VALUE OF VELOCITY DELTA =	.24000	
INPUT VALUE OF TEMPERATURE DELTA =	.31000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03259	.02868
MOMENTUM THICKNESS (THETA) =	.01662	.01661
ENERGY-DISSIPATION THICKNESS =	.02856	.02920
ENTHALPY THICKNESS =	.00220	.00241
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.96054	1.72652
SHAPE FACTOR 32 (ENERGY/THETA) =	1.71777	1.75774
MOMENTUM THICKNESS REYNOLDS NUMBER =	424.14	423.65
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	631.55	731.79
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.45267	-.47450
CLAUSERS 'G' INTEGRAL =	4.32362	2.98366
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02776	.02631
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01714	.01714
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.61989	1.53514

LOCATION -X- 28.40000

Z = -6 INCHES

K = 0.75 X 10^{-6}

Table 49.

KLL426C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 14. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.024	11.31	109.51	.235	.126
2	.0067	.030	12.74	108.98	.262	.150
3	.0076	.034	14.42	108.62	.285	.160
4	.0083	.036	15.78	108.33	.312	.167
5	.0093	.042	16.55	107.44	.327	.190
6	.0111	.050	19.34	105.65	.384	.237
7	.0126	.057	21.28	104.88	.420	.256
8	.0134	.060	22.47	104.65	.444	.257
9	.0157	.071	23.60	103.58	.466	.290
10	.0174	.079	25.49	103.57	.504	.290
11	.0197	.089	27.11	102.43	.535	.320
12	.0212	.096	28.06	101.13	.554	.353
13	.0226	.102	29.10	99.78	.575	.386
14	.0249	.112	30.66	98.55	.606	.420
15	.0268	.121	31.75	97.86	.619	.437
16	.0283	.128	32.36	97.54	.640	.446
17	.0302	.136	33.60	97.22	.664	.454
18	.0370	.167	36.71	95.34	.725	.503
19	.0434	.196	39.79	92.35	.776	.579
20	.0505	.228	41.67	90.03	.823	.625
21	.0568	.256	43.00	87.54	.849	.694
22	.0637	.287	43.96	85.08	.866	.769
23	.0703	.319	44.94	84.17	.886	.792
24	.0766	.345	45.74	83.85	.903	.800
25	.0839	.378	46.63	83.19	.921	.817
26	.0904	.407	47.07	82.27	.930	.841
27	.0964	.434	47.46	81.78	.937	.854
28	.1034	.466	47.94	80.88	.947	.877
29	.1107	.499	48.43	79.99	.957	.900
30	.1165	.525	48.64	79.53	.961	.901
31	.1233	.556	49.02	79.16	.968	.921
32	.1303	.587	49.25	78.40	.973	.941
33	.1474	.664	49.49	77.70	.978	.959
34	.1652	.744	50.01	77.21	.988	.972
35	.1826	.823	50.12	77.45	.990	.966
36	.2004	.903	50.10	77.23	.990	.971
37	.2177	.981	50.35	76.82	.993	.982
38	.2356	1.061	50.63	76.44	1.000	.992
39	.2526	1.138	50.55	76.46	.995	.991
40	.2704	1.218	50.62	76.32	1.000	.995
41	.2873	1.294	50.71	76.33	1.002	.995
42	.3057	1.377	50.85	76.16	1.004	.999
43	.3352	1.510	50.50	76.15	.997	.999
44	.3654	1.646	50.61	76.10	1.000	1.001
45	.3955	1.782	50.73	76.14	1.002	1.000
46	.4255	1.917	50.95	76.06	1.005	1.002
47	.4557	2.053	50.72	76.05	1.002	1.002
48	.4855	2.187	50.64	76.07	1.000	1.001
49	.5156	2.323	50.61	76.05	1.000	1.002
50	.5454	2.457	50.76	76.05	1.003	1.002
51	.5756	2.593	50.94	76.07	1.006	1.001
52	.6055	2.728	50.72	76.05	1.004	1.002
53	1.0955	4.630	50.67	76.04	1.001	1.002
54	1.5656	7.053	50.49	76.05	.997	1.002
55	2.0457	9.214	50.28	76.05	.993	1.002
56	2.5252	11.375	50.16	76.04	.991	1.002
57	3.0055	13.539	50.31	76.03	.994	1.002

Table 49.

KLEBZEC TAPE 47528 FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 15. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	55.942	55.942
FREE STREAM TEMPERATURE =	75.889	
WALL TEMPERATURE =	109.330	
WALL HEAT FLUX =	.04370	
FREE STREAM DENSITY =	.07462	
FREE STREAM KINEMATIC VISCOSITY =	.0001652	
DENSITY OF FLUID AT WALL =	.07524	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001839	
WALL/FREE STREAM DENSITY RATIO =	.94123	
LOCATION REYNOLDS NUMBER (REX) =	914154.44	
INPUT VALUE OF VELOCITY DELTA =	.24000	
INPUT VALUE OF TEMPERATURE DELTA =	.37000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03112	.02873
MOMENTUM THICKNESS (THETA) =	.01727	.01713
ENERGY-DISSIPATION THICKNESS =	.03014	.03036
ENTHALPY THICKNESS =	.00246	.00258
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.80679	1.67739
SHAPE FACTOR 32 (ENERGY/THETA) =	1.74961	1.77266
MOMENTUM THICKNESS REYNOLDS NUMBER =	496.04	483.20
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	878.16	810.52
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.42852	-.46011
CLAUSERS 'G' INTEGRAL =	3.69599	2.86794
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02608	.02623
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01771	.01761
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.47237	1.48945

LOCATION -Y- 32.40000

Z = CENTERLINE

K = 0.75×10^{-6}

Table 50.

NLCW20C TAPE 4752H FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 15. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.022	17.99	106.20	.322	.094
2	.0068	.029	19.47	104.63	.346	.141
3	.0075	.032	20.36	104.02	.364	.159
4	.0084	.036	21.16	103.59	.378	.160
5	.0097	.041	23.11	102.91	.413	.192
6	.0112	.048	25.80	102.44	.461	.206
7	.0125	.054	27.45	101.77	.491	.226
8	.0137	.059	28.61	100.65	.511	.253
9	.0157	.067	30.26	99.50	.541	.282
10	.0174	.074	31.94	99.55	.571	.292
11	.0195	.083	33.54	98.60	.600	.321
12	.0212	.090	34.61	97.34	.619	.359
13	.0226	.096	35.41	97.16	.633	.364
14	.0248	.106	36.77	96.92	.650	.371
15	.0265	.113	38.17	96.54	.682	.383
16	.0286	.122	39.17	96.08	.700	.396
17	.0302	.129	39.65	95.66	.709	.409
18	.0367	.156	42.16	92.71	.754	.497
19	.0438	.186	44.41	90.33	.794	.562
20	.0506	.215	46.19	88.69	.826	.617
21	.0564	.240	47.60	87.64	.851	.649
22	.0636	.270	48.95	87.15	.875	.663
23	.0706	.300	49.64	85.60	.887	.709
24	.0767	.326	50.49	84.44	.903	.744
25	.0836	.356	51.36	83.26	.918	.779
26	.0906	.385	51.93	81.84	.928	.822
27	.0966	.410	52.73	81.56	.930	.830
28	.1037	.440	52.83	81.31	.937	.836
29	.1104	.469	53.02	80.42	.946	.864
30	.1167	.496	53.43	79.95	.955	.877
31	.1237	.525	53.60	79.53	.956	.886
32	.1307	.555	53.86	79.22	.963	.900
33	.1473	.626	54.37	78.60	.972	.919
34	.1652	.702	54.87	78.45	.981	.923
35	.1826	.775	54.94	77.76	.982	.943
36	.2007	.852	55.43	77.13	.991	.963
37	.2173	.923	55.51	77.10	.992	.964
38	.2356	1.000	55.59	76.64	.995	.978
39	.2526	1.073	55.92	76.41	1.000	.984
40	.2704	1.148	55.87	76.34	.999	.987
41	.2874	1.220	56.04	76.19	1.002	.991
42	.3054	1.297	56.06	76.26	1.002	.988
43	.3351	1.423	56.06	76.01	1.002	.996
44	.3658	1.553	56.00	75.92	1.001	.999
45	.3957	1.680	56.06	75.91	1.002	.999
46	.4255	1.807	56.03	75.88	1.002	1.000
47	.4556	1.934	56.02	75.88	1.001	1.000
48	.4855	2.061	56.08	75.90	1.003	1.000
49	.5155	2.189	56.02	75.89	1.001	1.000
50	.5454	2.316	56.07	75.89	1.002	1.000
51	.5755	2.444	55.90	75.89	.999	1.000
52	.6055	2.571	55.89	75.89	.999	1.000
53	1.0853	4.608	55.96	75.88	1.000	1.000
54	1.5655	6.647	55.86	75.88	.998	1.000
55	2.0457	8.686	55.93	75.88	1.000	1.000
56	2.5258	10.721	55.87	75.88	.999	1.000
57	3.0057	12.761	55.95	75.85	1.001	1.001

Table 50.

KLCK26C TAPE 47524 FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 16. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	59.576	59.576
FREE STREAM TEMPERATURE =	75.866	
WALL TEMPERATURE =	107.116	
WALL HEAT FLUX =	.04520	
FREE STREAM DENSITY =	.07463	
FREE STREAM KINEMATIC VISCOSITY =	.0001692	
DENSITY OF FLUID AT WALL =	.07751	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001826	
WALL/FREE STREAM DENSITY RATIO =	.94487	
LOCATION REYNOLDS NUMBER (REX) =	1093827.56	
INPUT VALUE OF VELOCITY DELTA =	.26000	
INPUT VALUE OF TEMPERATURE DELTA =	.49000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.23500	
DISPLACEMENT THICKNESS (DELSTAR) =	.03305	.03058
MOMENTUM THICKNESS (THETA) =	.01869	.01876
ENERGY-DISSIPATION THICKNESS =	.03285	.03337
ENTHALPY THICKNESS =	.00252	.00263
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.76823	1.62967
SHAPE FACTOR 32 (ENERGY/THETA) =	1.75769	1.77864
MOMENTUM THICKNESS REYNOLDS NUMBER =	561.62	563.73
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	993.07	918.61
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.48969	-.52229
CLAUSERS 'G' INTEGRAL =	3.98639	3.06733
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02949	.02808
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01913	.01921
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.48901	1.46143

LOCATION -X- 36.40000

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 51.

KLCW26C TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 16. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0043	.016	13.63	101.65	.229	.166
2	.0057	.024	15.45	100.77	.259	.203
3	.0066	.028	17.35	101.22	.291	.186
4	.0083	.035	21.63	99.46	.363	.245
5	.0097	.041	24.47	98.91	.411	.262
6	.0107	.046	26.35	98.44	.442	.278
7	.0125	.053	29.04	96.75	.487	.330
8	.0146	.062	32.30	97.42	.542	.310
9	.0165	.070	33.56	96.66	.563	.334
10	.0182	.078	35.05	95.87	.586	.360
11	.0196	.084	36.31	95.96	.610	.356
12	.0213	.091	37.11	95.39	.623	.375
13	.0236	.101	38.59	93.56	.646	.433
14	.0256	.109	40.05	94.60	.672	.400
15	.0272	.116	40.62	94.44	.682	.405
16	.0337	.144	43.89	91.39	.737	.503
17	.0407	.173	46.16	89.62	.775	.553
18	.0476	.203	48.11	88.44	.807	.597
19	.0536	.228	49.45	87.55	.830	.642
20	.0607	.258	51.04	86.26	.857	.674
21	.0674	.287	51.72	85.27	.868	.699
22	.0738	.314	52.57	84.30	.887	.730
23	.0806	.343	53.37	83.61	.896	.752
24	.0876	.373	54.24	82.82	.910	.777
25	.0935	.398	54.45	82.75	.914	.780
26	.1005	.428	55.00	81.93	.923	.819
27	.1078	.459	55.65	81.26	.936	.827
28	.1137	.484	55.84	81.36	.937	.824
29	.1208	.514	56.56	81.32	.949	.825
30	.1274	.542	56.82	80.46	.949	.852
31	.1447	.616	57.19	78.84	.960	.905
32	.1622	.690	57.62	78.37	.967	.920
33	.1797	.765	58.28	78.63	.976	.911
34	.1977	.841	58.57	78.18	.983	.926
35	.2145	.913	58.92	77.46	.989	.948
36	.2327	.990	59.30	77.40	.995	.951
37	.2495	1.062	59.51	76.97	.999	.964
38	.2674	1.138	59.51	76.86	.999	.974
39	.2847	1.212	59.50	76.43	.999	.982
40	.3024	1.287	59.72	76.36	1.002	.983
41	.3322	1.414	59.79	76.19	1.004	.990
42	.3627	1.544	59.68	76.07	1.002	.993
43	.3924	1.670	59.70	76.01	1.002	.995
44	.4226	1.798	59.57	75.95	1.000	.997
45	.4526	1.926	59.59	75.89	1.000	.999
46	.4827	2.054	59.69	75.86	1.002	.999
47	.5127	2.182	59.69	75.87	1.002	1.000
48	.5425	2.309	59.75	75.85	1.003	1.000
49	.5723	2.435	59.79	75.86	1.004	1.000
50	.6027	2.565	59.83	75.85	1.004	1.000
51	1.0827	4.607	59.65	75.86	1.002	1.000
52	1.5627	6.650	59.59	75.88	1.000	.999
53	2.0424	8.691	59.52	75.87	.999	1.000
54	2.5221	10.732	59.53	75.86	.999	.999
55	3.0026	12.777	59.79	75.88	1.004	.999

Table 51.

KLEW26C TAPE 473CF FILES 115-143, RUN 3, PTS.1-19 10/15/8C

RUN NO. 3. POINT 17. GRID NO. 2

BOUNDARY LAYER PROPERTIES	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	59.299	59.299
FREE STREAM TEMPERATURE =	75.908	
WALL TEMPERATURE =	106.240	
WALL HEAT FLUX =	.04450	
FREE STREAM DENSITY =	.07462	
FREE STREAM KINEMATIC VISCOSITY =	.0001652	
DENSITY OF FLUID AT WALL =	.07062	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001821	
WALL/FREE STREAM DENSITY RATIO =	.9464C	
LOCATION REYNOLDS NUMBER (REX) =	1088581.78	
INPUT VALUE OF VELOCITY DELTA =	.28000	
INPUT VALUE OF TEMPERATURE DELTA =	.46000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03123	.02915
MOMENTUM THICKNESS (THETA) =	.01778	.01779
ENERGY-DISSIPATION THICKNESS =	.03134	.03166
ENTHALPY THICKNESS =	.00244	.00253
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.75678	1.63862
SHAPE FACTOR 32 (ENERGY/THETA) =	1.76336	1.77976
MOMENTUM THICKNESS REYNOLDS NUMBER =	531.58	531.99
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	933.88	871.64
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.43541	-.49399
CLAUSERS 'G' INTEGRAL =	3.65116	2.90387
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02620	.02670
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01820	.01822
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.43968	1.46561

LOCATION -X- 36.40000

Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 52.

MLD4260 TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 17. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.022	17.75	101.10	.293	.168
2	.0068	.028	21.66	100.70	.365	.183
3	.0075	.030	22.56	99.75	.380	.214
4	.0083	.034	24.37	98.73	.411	.248
5	.0093	.038	26.07	99.04	.440	.277
6	.0111	.045	29.09	98.65	.491	.290
7	.0126	.051	30.48	97.04	.514	.323
8	.0136	.055	31.25	96.47	.528	.332
9	.0153	.062	33.65	97.22	.567	.296
10	.0177	.072	35.20	95.15	.594	.364
11	.0194	.078	36.65	94.54	.619	.373
12	.0211	.085	37.92	93.22	.678	.429
13	.0227	.092	38.85	94.39	.656	.391
14	.0245	.099	39.37	94.30	.664	.394
15	.0267	.108	41.17	92.30	.694	.425
16	.0283	.114	42.31	92.60	.710	.450
17	.0301	.122	42.54	91.74	.717	.476
18	.0367	.148	45.37	90.16	.765	.530
19	.0435	.176	47.52	89.34	.801	.557
20	.0504	.204	49.06	87.67	.826	.612
21	.0565	.228	50.60	87.03	.853	.633
22	.0634	.256	51.57	85.75	.870	.674
23	.0706	.285	52.21	84.34	.891	.722
24	.0765	.309	53.24	83.51	.898	.765
25	.0838	.339	53.89	83.70	.909	.743
26	.0903	.368	54.32	82.34	.916	.788
27	.0963	.380	55.10	82.22	.929	.796
28	.1035	.418	55.45	81.72	.935	.808
29	.1105	.447	55.83	81.71	.942	.809
30	.1166	.471	56.16	80.62	.947	.838
31	.1233	.498	56.65	79.88	.955	.870
32	.1300	.526	56.53	79.45	.953	.882
33	.1475	.556	57.43	79.02	.966	.682
34	.1652	.667	58.12	78.72	.980	.907
35	.1827	.738	58.21	78.11	.982	.927
36	.2006	.810	58.49	77.48	.986	.948
37	.2174	.878	58.85	77.31	.993	.954
38	.2355	.951	58.57	76.85	.994	.968
39	.2526	1.021	59.04	76.74	.996	.972
40	.2705	1.093	59.35	76.61	1.001	.977
41	.2875	1.162	59.15	76.51	.996	.980
42	.3055	1.274	59.31	76.21	1.000	.988
43	.3355	1.354	59.40	76.17	1.002	.991
44	.3655	1.477	59.51	76.07	1.004	.995
45	.3955	1.598	59.43	75.98	1.002	.997
46	.4255	1.718	59.63	75.91	1.006	.998
47	.4557	1.841	59.40	75.93	1.003	.999
48	.4855	1.961	59.45	75.93	1.003	.999
49	.5155	2.083	59.78	75.90	1.004	1.000
50	.5454	2.203	59.51	75.90	1.004	1.000
51	.5755	2.325	59.40	75.87	1.002	1.001
52	.6055	2.446	59.51	75.88	1.003	1.001
53	1.0857	4.386	59.35	75.88	1.001	1.001
54	1.5655	6.324	59.32	75.88	.999	1.002
55	2.0455	8.263	59.31	75.88	1.000	1.002
56	2.5251	10.201	59.39	75.88	1.001	1.002
57	3.0054	12.141	59.41	75.88	1.002	1.001

Table 52.

KLDW26C TAPE 47526 FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 19. GRID NO. 3

BOUNDARY LAYER PROPERTIES

		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	67.436	67.436
FREE STREAM TEMPERATURE	=	75.415	
WALL TEMPERATURE	=	100.472	
WALL HEAT FLUX	=	.04550	
FREE STREAM DENSITY	=	.07464	
FREE STREAM KINEMATIC VISCOSITY	=	.0001651	
DENSITY OF FLUID AT WALL	=	.07130	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001790	
WALL/FREE STREAM DENSITY RATIO	=	.95527	
LOCATION REYNOLDS NUMBER (REX)	=	1375323.31	
INPUT VALUE OF VELOCITY DELTA	=	.28000	
INPUT VALUE OF TEMPERATURE DELTA	=	.46000	
CALCULATED DELTA	=		.25962
DELTA 99.5% INPUT	=	.25000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03019	.02957
MOMENTUM THICKNESS (THETA)	=	.01875	.01876
ENERGY-DISSIPATION THICKNESS	=	.03360	.03366
ENTHALPY THICKNESS	=	.00244	.00247
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.610588	1.576122
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.792393	1.794332
MOMENTUM THICKNESS REYNOLDS NUMBER	=	636.21	638.62
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1027.69	1006.55
SKIN FRICTION COEFFICIENT	=	.005735	
FRICTION VELOCITY	=	3.506364	
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		-.17891
CLAUSERS "DELTA" INTEGRAL	=	-.44448	-.51412
CLAUSERS "G" INTEGRAL	=	3.11662	2.87850
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02565	.02717
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01912	.01913
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.340765	1.420154

LOCATION -X- 40.40000

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 53.

[illegible] TAPE 4752F FILES 115-143, RUN 3, PTS.1-19 10/15/80

RUN NO. 3. POINT 19. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0043	.017	24.76	95.45	.367	.199	-11.976	6.948	6.078	7.185
2	[illegible]	.022	27.[illegible]	94.89	.404	.223	-11.275	7.648	7.473	9.674
3	.0068	.027	30.10	93.92	.446	.261	-10.476	8.446	8.778	11.333
4	.0074	.030	31.[illegible]	93.41	.468	.282	-10.062	8.861	9.462	12.329
5	.0086	.035	34.33	92.99	.509	.299	-9.290	9.634	10.028	14.652
6	.0102	.041	36.95	92.88	.548	.304	-8.554	10.369	10.198	16.975
7	[illegible]	.048	39.52	92.45	.586	.320	-7.873	11.090	10.750	19.961
8	.0126	.051	40.17	92.29	.596	.327	-7.651	11.273	10.969	20.957
9	.0147	.059	42.26	91.71	.627	.350	-7.059	11.865	11.742	24.441
10	.0165	.066	[illegible]	91.4[illegible]	.651	.361	-6.604	12.319	12.121	27.428
11	.0189	.076	45.38	90.72	.671	.389	-6.216	12.707	13.073	31.411
12	.0201	.081	45.84	90.15	.680	.412	-6.060	12.863	13.828	33.402
13	[illegible]	.087	47.15	89.76	.699	.426	-5.694	13.230	14.357	35.891
14	[illegible]	.096	[illegible]	89.68	.717	.431	-5.361	13.563	14.459	39.873
15	.0259	.104	49.[illegible]	88.79	.733	.466	-5.053	13.871	15.654	43.026
16	[illegible]	.111	50.05	88.98	.742	.475	-4.880	14.044	15.936	46.178
17	[illegible]	.117	[illegible]	[illegible]	.751	.471	-4.706	14.216	15.613	48.501
18	[illegible]	.143	[illegible]	[illegible]	.780	.495	-4.169	14.754	16.626	59.453
19	[illegible]	.169	54.36	[illegible]	.826	.544	-3.663	15.261	16.280	70.238
20	[illegible]	.199	56.75	85.69	.876	.590	-3.111	15.812	19.611	82.351
21	[illegible]	.223	57.26	84.96	.849	.618	-2.857	16.067	20.761	92.639
22	[illegible]	.252	58.09	84.60	.851	.633	-2.621	16.302	21.272	104.566
23	.0696	.279	59.47	[illegible]	.882	.655	-2.237	16.687	21.967	115.537
24	.0754	[illegible]	59.95	83.69	.889	.670	-2.101	16.823	22.491	125.161
25	.0824	[illegible]	60.71	83.41	.900	.691	-1.888	17.035	22.060	136.776
26	.0896	.359	61.16	[illegible]	.907	.724	-1.760	17.163	24.308	146.723
27	.0957	[illegible]	61.74	82.29	.915	.728	-1.599	17.324	24.367	158.845
28	.1030	.412	62.41	81.75	.925	.746	-1.411	17.512	25.038	170.958
29	.1097	.439	62.70	80.94	.930	.779	-1.328	17.595	26.170	162.075
30	.1159	.463	63.00	[illegible]	.934	.803	-1.245	17.679	26.963	192.197
31	.1227	.491	63.77	80.54	.940	.796	-1.141	17.782	26.718	203.646
32	.1295	.518	63.86	80.43	.947	.800	-1.004	17.919	26.654	214.929
33	.1464	.586	64.62	78.44	.958	.879	-.791	18.132	29.528	242.971
34	.1642	.657	65.43	78.88	.970	.862	-.563	18.360	28.939	272.507
35	.1818	.727	65.91	78.11	.977	.892	-.429	18.494	29.970	301.379
36	.1998	.799	66.29	[illegible]	.983	.916	-.323	18.601	30.744	331.578
37	.2166	.867	66.53	77.46	.987	.919	-.255	18.669	30.645	359.454
38	.2344	.938	66.87	[illegible]	.992	.940	-.158	18.765	31.553	388.990
39	[illegible]	1.007	67.15	76.68	.997	.950	-.053	18.870	31.892	417.862
40	.2698	1.079	67.32	[illegible]	.998	.965	-.032	18.892	32.400	447.729
41	.2868	1.147	67.27	75.92	.997	.980	-.047	18.876	32.909	475.937
42	.3044	1.218	67.45	75.80	1.000	.984	.003	18.926	33.080	505.141
43	[illegible]	1.337	67.60	75.65	1.002	.991	.045	18.968	33.264	554.422
44	.3647	1.459	67.48	75.48	1.001	.998	.012	18.935	33.500	605.197
45	.3945	1.578	67.51	75.44	1.001	.999	.020	18.943	33.547	654.644
46	[illegible]	1.698	67.48	75.45	1.001	.998	.012	18.935	33.528	704.969
47	[illegible]	1.817	67.53	75.43	1.001	.999	.027	18.951	33.558	753.870
48	[illegible]	1.940	67.60	75.42	1.002	1.000	.047	18.970	33.569	804.811
49	[illegible]	2.060	67.56	75.40	1.002	1.001	.035	18.959	33.598	854.424
50	[illegible]	2.179	67.62	75.42	1.003	1.000	.053	18.976	33.577	903.705
51	.5746	2.299	67.70	75.42	1.004	1.000	.074	18.997	33.577	953.484
52	.6046	2.419	67.68	75.42	1.004	1.000	.069	18.992	33.565	1003.263
53	1.0944	4.378	67.43	75.40	1.000	1.001	-.001	18.922	33.607	1799.395
54	1.5647	6.259	[illegible]	75.40	.998	1.001	-.045	18.878	33.600	2596.358
55	[illegible]	8.179	67.70	75.40	.996	1.001	-.077	18.887	33.600	3392.968
56	[illegible]	[illegible]	67.39	75.37	.999	1.002	-.013	18.911	33.637	4168.291
57	[illegible]	12.019	67.67	75.39	1.003	1.001	.066	18.989	33.614	4965.585

Table 53.

KLEMKEBE 11/24/81 0646? 13-16, RUN 3, PTS.20-24

RUN NO. 3. POINT 20. GRID NO. 2

BOUNDARY LAYER PROPERTIES

		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	83.420	83.420
FREE STREAM TEMPERATURE	=	74.994	
WALL TEMPERATURE	=	95.180	
WALL HEAT FLUX	=	.04760	
FREE STREAM DENSITY	=	.07515	
FREE STREAM KINEMATIC VISCOSITY	=	.0001639	
DENSITY OF FLUID AT WALL	=	.07241	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001750	
WALL/FREE STREAM DENSITY RATIO	=	.96362	
LOCATION REYNOLDS NUMBER (REX)	=	2053225.92	
INPUT VALUE OF VELOCITY DELTA	=	.34000	
INPUT VALUE OF TEMPERATURE DELTA	=	.43000	
CALCULATED DELTA	=		.27269
DELTA 99.5% INPUT	=	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03053	.03048
MOMENTUM THICKNESS (THETA)	=	.01976	.02005
ENERGY-DISSIPATION THICKNESS	=	.03591	.03618
ENTHALPY THICKNESS	=	.00243	.00244
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.54490	1.52031
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.81697	1.80500
MOMENTUM THICKNESS REYNOLDS NUMBER	=	638.40	650.38
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1295.25	1292.84
SKIN FRICTION COEFFICIENT	=	.00497	
FRICTION VELOCITY	=	4.23888	
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		-.14541
CLAUSERS 'DELTA' INTEGRAL	=	-.44864	-.55229
CLAUSERS 'G' INTEGRAL	=	3.11780	2.97595
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02846	.02866
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.02009	.02038
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.26759	1.37764

LOCATION -X- 48.40000

Z = CENTERLINE

$K = 0.75 \times 10^{-6}$

Table 54.

WLEMWEE26 11/04/80 4648P 13-16, RUN 3, PTS.20-24

RUN NO. 3. POINT 20. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0053	[illegible]	38.16	90.47	.457	.273	-10.677	9.003	7.285	10.761
2	.0068	.025	43.80	89.85	.525	.264	-9.347	10.332	8.249	13.790
3	.0076	.028	45.54	89.65	.550	.272	-8.664	10.815	8.496	15.203
4	.0089	.033	49.15	89.31	.589	.290	-8.085	11.594	9.051	18.030
5	.0095	.035	50.18	89.12	.602	.300	-7.641	11.839	9.377	19.241
6	.0112	.041	53.59	88.60	.636	.326	-7.155	12.525	10.181	22.673
7	.0129	.047	54.91	88.24	.656	.344	-6.725	12.955	10.747	26.106
8	.0135	.050	55.45	88.12	.665	.349	-6.599	13.080	10.906	27.317
9	.0154	.057	57.04	87.94	.684	.378	-6.222	13.457	11.622	31.153
10	.0175	.064	58.94	87.53	.707	.379	-5.775	13.904	11.634	35.393
11	.0193	.071	59.77	87.30	.717	.391	-5.579	14.101	12.200	39.027
12	.0211	.078	60.56	87.45	.726	.383	-5.393	14.286	11.958	42.661
13	.0225	.083	61.33	86.84	.735	.413	-5.210	14.469	12.906	45.468
14	.0244	.090	62.05	86.46	.744	.432	-5.042	14.638	13.500	49.324
15	.0266	.098	62.90	86.33	.754	.426	-4.842	14.838	13.384	53.766
16	.0287	.106	63.56	86.22	.762	.444	-4.679	15.000	13.665	58.006
17	.0301	.111	64.00	85.93	.767	.456	-4.581	15.099	14.322	60.832
18	.0365	.134	66.23	85.28	.794	.490	-4.056	15.623	15.320	73.754
19	.0435	.160	67.71	84.80	.812	.511	-3.705	15.974	15.970	87.887
20	.0504	.185	69.34	84.34	.831	.537	-3.322	16.356	16.779	101.818
21	.0563	.207	[illegible]	83.59	.842	.574	-3.107	16.573	17.934	113.730
22	.0637	.234	71.87	[illegible]	.856	.591	-2.795	16.884	18.449	128.670
23	.0704	.259	72.18	82.83	.867	.612	-2.627	17.053	19.110	142.197
24	.0766	.281	73.19	82.62	.877	.622	-2.413	17.267	19.436	154.715
25	.0838	.308	74.06	82.46	.890	.630	-2.157	17.523	19.667	169.252
26	.0900	.331	74.92	82.26	.897	.640	-2.030	17.650	19.989	183.567
27	.0967	.355	75.55	81.49	.906	.676	-1.857	17.823	21.187	195.297
28	.1040	.382	76.29	81.32	.915	.687	-1.682	17.997	21.457	210.035
29	.1105	.406	76.76	80.77	.920	.714	-1.570	18.110	22.307	223.159
30	.1166	.428	77.38	80.41	.928	.742	-1.425	18.255	23.167	235.474
31	.1233	.453	78.03	80.30	.935	.737	-1.270	18.409	23.029	249.002
32	.1305	.479	78.64	80.27	.943	.779	-1.129	18.551	23.071	263.538
33	.1477	.543	79.46	79.19	.952	.792	-.935	18.745	24.742	298.265
34	.1652	.607	80.70	78.62	.963	.821	-.736	18.944	25.633	333.597
35	.1823	.670	81.19	77.86	.973	.857	-.526	19.154	26.771	368.122
36	.2005	.736	81.62	77.58	.976	.872	-.425	19.254	27.242	404.868
37	.2175	.799	82.19	77.24	.985	.889	-.290	19.389	27.771	439.190
38	.2355	.865	82.54	76.77	.989	.912	-.207	19.473	28.486	475.532
39	.2528	.929	82.90	76.38	.993	.923	-.145	19.534	29.149	510.461
40	.2705	.994	83.05	76.16	.996	.942	-.068	19.592	29.431	546.197
41	.2879	1.057	83.16	75.90	.997	.955	-.061	19.619	29.644	581.327
42	.3054	1.122	83.28	75.51	.998	.975	-.033	19.647	30.449	616.659
43	.3351	1.231	83.39	75.38	1.000	.981	-.007	19.673	30.645	676.623
44	.3655	1.342	83.39	75.22	1.000	.989	-.007	19.672	30.697	738.000
45	.3954	1.452	83.36	75.06	.999	.997	-.010	19.669	31.142	798.368
46	.4257	1.562	83.49	74.99	1.001	1.000	.016	19.697	31.244	859.736
47	.4553	1.672	83.43	74.96	1.000	1.001	.002	19.682	31.263	919.305
48	.4855	1.784	83.48	75.00	1.001	1.000	.014	19.694	31.229	980.865
49	.5155	1.893	83.36	75.00	.999	1.000	-.014	19.665	31.228	1040.848
50	.5455	2.003	83.50	74.99	1.001	1.000	.018	19.698	31.253	1101.418
51	.5753	2.113	83.43	74.96	1.000	1.001	.002	19.682	31.266	1161.564
52	.6050	2.224	83.47	74.96	1.001	1.001	.013	19.692	31.256	1222.759
53	.9854	3.619	83.40	74.98	1.000	1.001	-.006	19.674	31.266	1989.571
54	1.3656	5.015	83.18	74.98	.997	1.001	-.056	19.624	31.266	2757.190
55	1.7451	6.409	83.41	74.96	1.000	1.002	-.002	19.678	31.299	3523.395
56	2.1259	7.808	83.40	74.95	1.000	1.002	-.005	19.674	31.307	4292.226
57	2.5057	9.202	83.44	74.97	1.000	1.001	.005	19.684	31.282	5059.037

Table 54.

NLCMWeIE 11/04/EL 4648P 13-16, RUN 3, PTS.2C-24

RLN NO. 3. POINT 21. GRID NO. 2

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	63.159	63.159
FREE STREAM TEMPERATURE =	74.950	
WALL TEMPERATURE =	95.610	
WALL HEAT FLUX =	.04820	
FREE STREAM DENSITY =	.07515	
FREE STREAM KINEMATIC VISCOSITY =	.0001639	
DENSITY OF FLUID AT WALL =	.07236	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001752	
WALL/FREE STREAM DENSITY RATIO =	.96287	
LOCATION REYNOLDS NUMBER (REX) =	2046840.61	
INPUT VALUE OF VELOCITY DELTA =	.29000	
INPUT VALUE OF TEMPERATURE DELTA =	.49000	
CALCULATED DELTA =		.26858
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.02993	.02976
MOMENTUM THICKNESS (THETA) =	.01934	.01951
ENERGY-DISSIPATION THICKNESS =	.03562	.03519
ENTHALPY THICKNESS =	.00246	.00246
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.54749	1.52542
SHAPE FACTOR 32 (ENERGY/THETA) =	1.81020	1.80394
MOMENTUM THICKNESS REYNOLDS NUMBER =	816.04	825.06
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1265.91	1256.56
SKIN FRICTION COEFFICIENT =	.005024	
FRICTION VELOCITY =	4.24752	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.15966
CLAUSERS "DELTA" INTEGRAL =	-.45530	-.53652
CLAUSERS "G" INTEGRAL =	3.03332	2.89756
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02542	.02740
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01967	.01964
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.29222	1.38093

LOCATION -X- 48.40000

Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 55.

PLEMMISCE 11/04/80 46480 13-16, RUN 3, PTS.20-24

PLN NO. 3. POINT 21. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0[illegible]	.0616	32.65	91.55	.393	.195	-11.691	7.687	6.149	8.748
2	.0[illegible]	.0[illegible]	37.[illegible]	91.16	.445	.216	-10.658	8.720	6.816	11.172
3	.0[illegible]	.0[illegible]	41.[illegible]	90.21	.496	.262	-9.832	9.746	8.261	13.597
4	.0[illegible]	.0[illegible]	44.66	89.64	.541	.289	-8.988	10.591	9.129	15.617
5	.0[illegible]	.0[illegible]	47.13	89.56	.567	.293	-8.462	11.096	9.233	17.234
6	.0101	.0[illegible]	50.48	89.45	.607	.299	-7.694	11.885	9.422	20.466
7	.0115	.0[illegible]	52.84	88.91	.635	.325	-7.137	12.441	10.250	23.295
8	.0126	.0[illegible]	53.[illegible]	88.55	.644	.340	-6.968	12.610	10.742	25.315
9	.0147	.0[illegible]	56.07	88.04	.674	.367	-6.378	13.201	11.585	29.760
10	.0163	.0[illegible]	57.[illegible]	87.72	.698	.383	-6.110	13.468	12.076	32.992
11	.0[illegible]	.0[illegible]	58.[illegible]	87.77	.707	.380	-5.730	13.848	11.990	37.841
12	.0[illegible]	.0[illegible]	59.[illegible]	87.46	.721	.394	-5.469	14.109	12.434	40.871
13	.0[illegible]	.0[illegible]	60.[illegible]	87.20	.729	.408	-5.303	14.275	12.677	43.902
14	.0[illegible]	.0[illegible]	61.38	87.[illegible]	.738	.416	-5.131	14.447	13.129	47.943
15	.0[illegible]	.0[illegible]	62.16	86.[illegible]	.747	.420	-4.944	14.634	13.257	51.377
16	.0[illegible]	.1[illegible]	63.22	86.71	.760	.432	-4.693	14.885	13.825	56.024
17	.0[illegible]	.1[illegible]	63.76	86.55	.767	.441	-4.560	15.018	13.914	58.853
18	.0[illegible]	.1[illegible]	65.65	86.[illegible]	.789	.462	-4.182	15.456	15.202	71.379
19	.0[illegible]	.1[illegible]	67.72	86.[illegible]	.814	.521	-3.635	15.943	16.451	85.925
20	.0[illegible]	.1[illegible]	69.[illegible]	86.45	.831	.539	-3.316	16.260	17.012	100.270
21	.0[illegible]	.2[illegible]	70.[illegible]	86.26	.844	.550	-3.051	16.527	17.366	111.785
22	.0[illegible]	.2[illegible]	71.[illegible]	86.[illegible]	.866	.594	-2.742	16.836	16.757	126.332
23	.0[illegible]	.2[illegible]	72.[illegible]	86.[illegible]	.876	.596	-2.506	17.073	18.660	140.474
24	.0[illegible]	.2[illegible]	73.[illegible]	86.[illegible]	.884	.604	-2.312	17.266	19.051	152.596
25	.0[illegible]	.3[illegible]	74.[illegible]	86.[illegible]	.892	.652	-2.121	17.457	20.576	166.739
26	.0[illegible]	.3[illegible]	74.87	81.[illegible]	.900	.663	-1.952	17.626	20.934	180.861
27	.0[illegible]	.3[illegible]	75.75	81.[illegible]	.911	.665	-1.745	17.833	20.978	192.801
28	.0[illegible]	.3[illegible]	76.[illegible]	81.[illegible]	.915	.709	-1.673	17.906	22.358	207.550
29	.1[illegible]	.4[illegible]	76.73	80.[illegible]	.923	.711	-1.513	18.066	22.449	221.086
30	.1[illegible]	.4[illegible]	77.[illegible]	80.77	.929	.720	-1.381	18.198	22.716	234.218
31	.1[illegible]	.4[illegible]	77.[illegible]	80.[illegible]	.937	.735	-1.240	18.338	23.178	247.552
32	.1[illegible]	.4[illegible]	78.[illegible]	80.[illegible]	.942	.749	-1.136	18.440	23.637	261.897
33	.1463	.5435	79.[illegible]	79.[illegible]	.950	.806	-.972	18.606	25.436	295.636
34	.1541	.611	80.[illegible]	79.[illegible]	.960	.839	-.862	18.916	26.463	331.599
35	.1616	.6766	80.[illegible]	78.[illegible]	.974	.854	-.816	19.062	26.944	366.954
36	.1995	.7423	81.54	77.[illegible]	.981	.875	-.381	19.197	27.623	403.119
37	.2170	.8068	82.[illegible]	76.[illegible]	.987	.908	-.259	19.319	28.654	438.475
38	.2343	.8718	82.[illegible]	76.[illegible]	.990	.925	-.191	19.388	29.195	473.426
39	.2518	.937	82.62	76.[illegible]	.994	.921	-.127	19.452	29.053	508.176
40	.2696	1.0044	82.81	75.[illegible]	.996	.957	-.081	19.497	30.213	544.744
41	.2865	1.067	83.[illegible]	75.[illegible]	.999	.959	-.026	19.553	30.463	578.888
42	.3046	1.1344	83.[illegible]	75.[illegible]	.999	.956	-.023	19.555	30.180	615.456
43	.3242	1.2044	83.[illegible]	75.[illegible]	1.000	.979	.008	19.586	30.685	675.258
44	.3443	1.2817	83.[illegible]	75.[illegible]	1.001	.989	.015	19.593	31.193	736.475
45	.3648	1.3582	83.[illegible]	75.[illegible]	1.000	.997	.013	19.611	31.458	797.085
46	.3848	1.4331	83.[illegible]	75.[illegible]	1.000	.998	.005	19.583	31.329	857.695
47	.4049	1.5084	83.[illegible]	75.[illegible]	1.000	.997	.009	19.587	31.457	919.114
48	.4249	1.5834	83.[illegible]	74.[illegible]	1.001	1.001	.008	19.606	31.578	978.916
49	.4449	1.6584	83.[illegible]	74.[illegible]	1.001	1.000	.015	19.593	31.565	1039.526
50	.4649	1.7334	83.[illegible]	74.[illegible]	1.001	1.000	.014	19.592	31.554	1100.540
51	.4849	1.8084	83.[illegible]	74.[illegible]	1.000	1.000	.005	19.584	31.544	1160.948
52	.5146	1.9191	83.[illegible]	74.[illegible]	1.000	1.001	.019	19.597	31.587	1221.357
53	.5746	2.1251	83.[illegible]	74.57	1.001	1.001	.010	19.588	31.574	1965.884
54	.6[illegible]	2.251	83.[illegible]	74.[illegible]	.999	1.000	-.025	19.553	31.558	2757.624
55	1.3649	5.0852	83.[illegible]	74.[illegible]	1.000	1.001	-.004	19.575	31.574	3523.737
56	1.7441	6.4994	83.14	74.[illegible]	1.000	1.000	-.009	19.569	31.557	4291.870
57	2.1243	7.9135	83.[illegible]	74.[illegible]	1.001	1.000	.020	19.598	31.597	5059.802
	2.[illegible]44	9.325	83.24	74.[illegible]						

Table 55.

KLEMMEC6 11/04/cC 46485 13-16, RUN 5, PTS.2C-24

PLN NC. 3. POINT 22. GRID NO. -

BOUNDARY LAYER PROPERTIES	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	82.860	82.860
FREE STREAM TEMPERATURE =	75.718	
WALL TEMPERATURE =	95.520	
WALL HEAT FLUX =	.04680	
FREE STREAM DENSITY =	.07510	
FREE STREAM KINEMATIC VISCOSITY =	.0001640	
DENSITY OF FLUID AT WALL =	.07237	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001761	
WALL/FREE STREAM DENSITY RATIO =	.96361	
LOCATION REYNOLDS NUMBER (REX) =	2037259.05	
INPUT VALUE OF VELOCITY DELTA =	.31000	
INPUT VALUE OF TEMPERATURE DELTA =	.49000	
CALCULATED DELTA =		.26659
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.02943	.02957
MOMENTUM THICKNESS (THETA) =	.01937	.01948
ENERGY-DISSIPATION THICKNESS =	.03511	.03517
ENTHALPY THICKNESS =	.00234	.00234
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.51967	1.51809
SHAPE FACTOR 32 (ENERGY/THETA) =	1.81319	1.80542
MOMENTUM THICKNESS REYNOLDS NUMBER =	815.15	819.98
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1238.76	1244.61
SKIN FRICTION COEFFICIENT =	.005041	
FRICTION VELOCITY =	4.23788	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.16031
CLAUSERS 'DELTA' INTEGRAL =	-.45615	-.53367
CLAUSERS 'B' INTEGRAL =	2.85881	2.86843
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02524	.02730
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01968	.01960
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.28266	1.37893

LOCATION -Y- 48.40000

Z = -6 INCHES

K = 0.75 X 10^{-6}

Table 56.

KLEMWF26 11/04/80 46489 13-16, RUN 3, PTS.20-24

RUN NO. 3. POINT 22. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE / UTAU	U(+)	T(+)	Y(+)
1	.0033	.014	33.41	91.72	.403	.186	-11.669	7.883	5.979	7.723
2	.0054	.020	39.35	91.01	.475	.223	-10.267	9.285	7.088	10.949
3	.0061	.023	42.39	90.58	.512	.245	-9.549	10.003	7.769	12.360
4	.0068	.026	44.55	89.83	.541	.282	-8.968	10.584	8.955	13.772
5	.0079	.030	47.57	89.78	.574	.284	-8.328	11.225	9.027	15.990
6	.0096	.036	50.72	90.09	.612	.269	-7.584	11.968	8.544	19.417
7	.0112	.042	52.66	89.18	.636	.314	-7.122	12.470	9.968	22.643
8	.0122	.046	53.74	88.90	.649	.347	-6.871	12.681	11.037	24.660
9	.0140	.053	55.34	88.94	.666	.326	-6.493	13.060	10.347	28.269
10	.0160	.060	57.04	87.44	.686	.400	-6.092	13.460	12.712	32.322
11	.0179	.067	56.46	87.82	.705	.381	-5.758	13.794	12.113	36.153
12	.0197	.074	59.68	87.70	.720	.387	-5.469	14.083	12.292	39.782
13	.0212	.080	60.34	87.71	.726	.387	-5.313	14.239	12.289	42.807
14	.0230	.086	61.41	87.04	.741	.420	-5.061	14.491	13.335	46.436
15	.0250	.094	62.23	86.57	.751	.443	-4.866	14.684	14.070	50.469
16	.0274	.103	63.[illegible]	86.26	.760	.456	-4.687	14.865	14.539	55.308
17	.0287	.108	63.43	86.19	.765	.462	-4.585	14.967	14.680	57.929
18	.0352	.132	65.77	85.56	.794	.493	-4.033	15.519	15.656	71.035
19	.0422	.158	67.47	84.56	.814	.543	-3.632	15.920	17.239	85.150
20	.0492	.185	68.87	84.37	.831	.552	-3.301	16.251	17.534	99.264
21	.0553	.208	70.[illegible]	84.20	.845	.560	-3.036	16.517	17.607	111.564
22	.0621	.233	71.11	83.57	.856	.591	-2.771	16.781	18.789	125.275
23	.0691	.259	72.16	83.[illegible]	.871	.619	-2.520	17.033	19.652	139.369
24	.0749	.281	73.[illegible]	83.[illegible]	.882	.620	-2.309	17.243	19.689	151.064
25	.0822	.3[illegible]	73.81	82.79	.891	.630	-2.136	17.416	20.029	165.803
26	.0893	.335	74.59	81.85	.905	.676	-1.856	17.696	21.494	180.119
27	.0951	.357	75.33	81.75	.909	.682	-1.776	17.776	21.657	191.814
28	.1019	.382	75.95	81.5[illegible]	.917	.693	-1.630	17.922	22.026	205.525
29	.1089	.409	76.60	80.87	.924	.725	-1.478	18.074	23.044	219.639
30	.1149	.431	77.27	80.53	.932	.742	-1.320	18.232	23.578	231.737
31	.1222	.458	77.27	80.2[illegible]	.933	.756	-1.319	18.233	24.023	246.456
32	.1292	.485	77.92	79.92	.940	.772	-1.166	18.386	24.538	260.571
33	.1460	.548	78.99	78.93	.953	.821	-.912	18.640	26.095	294.445
34	.1637	.614	79.85	78.84	.964	.826	-.710	18.842	26.236	330.134
35	.1811	.679	80.59	77.99	.973	.868	-.535	19.017	27.563	365.218
36	.1990	.747	81.10	77.40	.979	.897	-.415	19.137	28.496	401.310
37	.2159	.810	81.77	77.6[illegible]	.987	.886	-.256	19.296	28.160	435.366
38	.2343	.879	82.26	77.00	.993	.917	-.136	19.416	29.121	472.487
39	.2512	.942	82.25	76.82	.993	.941	-.144	19.408	29.687	506.563
40	.2694	1.011	82.46	76.36	.995	.948	-.095	19.457	30.130	543.260
41	.2858	1.072	82.66	76.01	.998	.966	-.047	19.506	30.686	576.328
42	.3042	1.141	82.72	75.86	.998	.973	-.032	19.520	30.923	613.429
43	.3336	1.251	82.76	75.82	.999	.975	-.019	19.533	30.960	672.709
44	.3639	1.365	82.87	75.50	1.000	.991	.001	19.554	31.493	733.602
45	.3941	1.478	82.93	75.42	1.001	.995	.018	19.570	31.606	794.697
46	.4245	1.592	82.94	75.44	1.001	.994	.016	19.570	31.583	855.993
47	.4542	1.704	82.97	75.36	1.001	.996	.025	19.577	31.704	915.878
48	.4842	1.816	82.97	75.29	1.001	1.001	.025	19.577	31.811	976.368
49	.5139	1.928	82.99	75.31	1.002	1.000	.031	19.583	31.786	1036.253
50	.5438	2.040	82.92	75.33	1.001	.999	.015	19.567	31.756	1096.542
51	.5742	2.154	82.93	75.32	1.001	1.000	.017	19.570	31.777	1157.838
52	.6038	2.265	82.87	75.29	1.000	1.001	.002	19.554	31.811	1217.521
53	.9838	3.690	82.88	75.30	1.000	1.001	.006	19.558	31.808	1963.727
54	1.3642	5.117	82.74	75.26	.999	1.003	-.028	19.524	31.660	2750.740
55	1.7437	6.541	82.91	75.25	1.001	1.004	.011	19.563	31.687	3515.938
56	2.1242	7.968	82.61	75.21	.999	1.005	-.012	19.540	31.938	4283.152
57	2.5038	9.392	82.77	75.33	.999	.999	-.020	19.572	31.754	5048.551

Table 56.

KLEMP&C6 11/04/8C 46485 13-16, RUN 3, PTS.2C-24

RUN NO. 3. POINT 23. GRID NO. 2

BOUNDARY LAYER PROPERTIES

		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	110.468	110.468
FREE STREAM TEMPERATURE	=	75.434	
WALL TEMPERATURE	=	91.670	
WALL HEAT FLUX	=	.04870	
FREE STREAM DENSITY	=	.07568	
FREE STREAM KINEMATIC VISCOSITY	=	.0001641	
DENSITY OF FLUID AT WALL	=	.07287	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001730	
WALL/FREE STREAM DENSITY RATIO	=	.97055	
LOCATION REYNOLDS NUMBER (REX)	=	3164352.34	
INPUT VALUE OF VELOCITY DELTA	=	.28000	
INPUT VALUE OF TEMPERATURE DELTA	=	.49000	
CALCULATED DELTA	=		.24026
DELTA 99.5% INPUT	=	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.02672	.02651
MOMENTUM THICKNESS (THETA)	=	.01735	.01773
ENERGY-DISSIPATION THICKNESS	=	.03168	.03212
ENTHALPY THICKNESS	=	.00221	.00222
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.54009	1.49476
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.82612	1.81113
MOMENTUM THICKNESS REYNOLDS NUMBER	=	973.44	994.65
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1499.18	1487.12
SKIN FRICTION COEFFICIENT	=	.00486	
FRICTION VELOCITY	=	5.49768	
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		-.1324
CLAUSERS 'DELTA' INTEGRAL	=	-.38735	-.46997
CLAUSERS 'G' INTEGRAL	=	2.62602	2.57674
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02194	.02439
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01761	.01800
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.24603	1.35442

LOCATION -X- 56.40000

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 57.

KLFMWC06 11/04/80 4648P 13-16, RUN 3, PTS.20-24

RUN NO. 3. POINT 23. GRID NO. 2

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0053	.022	53.81	88.35	.487	.202	-10.310	9.787	6.479	14.114
2	.0063	.026	59.65	87.86	.542	.234	-9.211	10.886	7.516	16.762
3	.0076	.032	66.52	87.46	.602	.259	-7.997	12.100	8.312	20.205
4	.0086	.036	70.02	87.49	.634	.257	-7.361	12.736	8.652	22.853
5	.0095	.040	72.44	87.14	.656	.279	-6.921	13.176	8.943	25.236
6	.0112	.047	75.43	86.86	.683	.306	-6.377	13.721	9.688	29.737
7	.0123	.051	76.95	86.56	.696	.315	-6.100	13.997	10.097	32.650
8	.0135	.056	78.21	86.28	.706	.332	-5.671	14.226	10.648	35.828
9	.0155	.065	79.96	85.58	.724	.357	-5.554	14.543	11.440	41.124
10	.0175	.073	81.49	85.94	.738	.353	-5.275	14.822	11.318	46.420
11	.0197	.082	82.74	85.57	.749	.376	-5.047	15.050	12.052	52.246
12	.0212	.088	83.68	85.36	.757	.389	-4.677	15.220	12.455	56.218
13	.0225	.094	84.18	85.21	.762	.398	-4.785	15.312	12.758	59.660
14	.0247	.103	85.25	84.89	.772	.418	-4.591	15.506	13.390	65.486
15	.0267	.111	86.02	84.74	.779	.427	-4.451	15.646	13.683	70.762
16	.0285	.119	86.61	84.72	.784	.428	-4.343	15.755	13.727	75.548
17	.0302	.126	87.39	84.74	.791	.427	-4.200	15.897	13.676	80.050
18	.0365	.152	89.58	84.39	.811	.446	-3.803	16.295	14.372	96.733
19	.0433	.180	91.55	83.85	.829	.479	-3.445	16.653	15.367	114.739
20	.0505	.210	93.49	83.52	.846	.502	-3.091	17.006	16.096	133.805
21	.0565	.235	94.79	83.25	.858	.519	-2.856	17.241	16.622	149.694
22	.0634	.264	96.17	83.01	.870	.533	-2.604	17.493	17.092	167.965
23	.0705	.294	97.51	82.83	.883	.545	-2.361	17.736	17.456	186.766
24	.0767	.319	98.71	82.40	.893	.571	-2.142	17.955	18.307	203.164
25	.0833	.347	99.78	82.30	.903	.577	-1.948	18.149	18.494	220.661
26	.0894	.370	100.75	81.33	.912	.606	-1.772	18.325	19.432	239.462
27	.0963	.401	101.65	81.25	.920	.642	-1.608	18.489	20.570	255.065
28	.1035	.431	102.35	81.16	.926	.647	-1.481	18.616	20.743	274.151
29	.1109	.462	103.00	80.91	.933	.662	-1.348	18.750	21.235	293.747
30	.1164	.485	103.71	80.93	.939	.661	-1.233	18.864	21.200	308.311
31	.1235	.514	104.36	80.53	.945	.686	-1.114	18.983	22.001	327.112
32	.1305	.543	105.11	80.03	.951	.717	-.978	19.119	22.985	345.648
33	.1477	.615	106.49	79.56	.964	.745	-.727	19.370	23.666	391.194
34	.1652	.688	107.55	79.12	.973	.773	-.535	19.563	24.780	437.535
35	.1825	.760	108.28	78.24	.980	.827	-.401	19.696	26.521	483.346
36	.2006	.835	109.07	77.73	.987	.857	-.257	19.840	27.482	531.276
37	.2175	.905	109.50	76.91	.991	.909	-.180	19.917	29.142	576.027
38	.2355	.980	109.86	76.83	.994	.913	-.111	19.986	29.259	623.692
39	.2525	1.051	110.07	76.67	.996	.924	-.075	20.022	29.621	668.709
40	.2705	1.125	110.37	76.36	.999	.943	-.021	20.076	30.232	715.844
41	.2876	1.197	110.42	76.26	.999	.961	-.012	20.085	30.621	761.655
42	.3055	1.272	110.44	76.02	1.000	.964	-.009	20.088	30.902	809.055
43	.3351	1.395	110.60	75.77	1.001	.979	.021	20.118	31.384	887.437
44	.3654	1.521	110.54	75.54	1.001	.994	.010	20.107	31.653	967.672
45	.3957	1.647	110.61	75.49	1.001	.997	.023	20.120	31.945	1047.908
46	.4255	1.771	110.58	75.46	1.001	.998	.017	20.114	31.995	1126.819
47	.4555	1.896	110.59	75.43	1.001	1.000	.018	20.115	32.066	1206.260
48	.4853	2.020	110.64	75.44	1.001	1.000	.023	20.120	32.046	1265.172
49	.5156	2.146	110.58	75.44	1.001	1.000	.018	20.115	32.051	1365.407
50	.5455	2.271	110.56	75.44	1.001	.999	.012	20.109	32.040	1444.583
51	.5755	2.395	110.57	75.42	1.001	1.001	.015	20.112	32.079	1524.025
52	.6053	2.520	110.60	75.43	1.001	1.000	.020	20.117	32.065	1602.936
53	.8855	[illegible]	110.34	75.44	.999	1.000	-.028	20.069	32.045	2344.916
54	1.1555	[illegible]	110.30	75.42	.998	1.001	-.037	20.060	32.088	3086.366
55	1.4455	6.017	110.30	75.43	.998	1.000	-.035	20.062	32.067	3827.817
56	1.7255	7.182	110.29	75.44	.996	1.000	-.036	20.061	32.053	4569.267
57	2.0053	8.347	109.55	75.60	.991	.989	-.171	19.926	31.720	5310.165

Table 57.

KLEMP07 TAPE 46428- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 19. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	36.602	36.602
FREE STREAM TEMPERATURE =	73.300	
WALL TEMPERATURE =	99.830	
WALL HEAT FLUX =	.04620	
FREE STREAM DENSITY =	.07459	
FREE STREAM KINEMATIC VISCOSITY =	.0001647	
DENSITY OF FLUID AT WALL =	.07165	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001794	
WALL/FREE STREAM DENSITY RATIO =	.95258	
LOCATION REYNOLDS NUMBER (REX) =	81492.42	
INPUT VALUE OF VELOCITY DELTA =	.91000	
INPUT VALUE OF TEMPERATURE DELTA =	.97000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.06600	
DISPLACEMENT THICKNESS (DELSTAR) =	.01929	.01439
MOMENTUM THICKNESS (THETA) =	.00721	.00632
ENERGY-DISSIPATION THICKNESS =	.01065	.00984
ENTHALPY THICKNESS =	.00046	.00054
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.53753	2.27812
SHAPE FACTOR 32 (ENERGY/THETA) =	1.47746	1.55761
MOMENTUM THICKNESS REYNOLDS NUMBER =	133.50	117.00
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	338.77	266.55
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.20253	-.22439
CLAUSERS 'G' INTEGRAL =	2.74611	1.93637
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.01517	.01365
MOMENTUM THICKNESS - CONSTANT DENSITY =	.00737	.00647
SHAPE FACTOR 12 - CONSTANT DENSITY =	2.05839	2.13992

LOCATION -Y- 4.40000

Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 58.

KLDYWEST TAPE 464EF- FILES 17-36, RUN 4, PTS.1-20 11/11/80

PLA NO. 4. POINT 19. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.054	12.76	92.12	.348	.253
2	.0066	.077	12.77	92.14	.349	.290
3	.0076	.089	13.05	91.35	.357	.320
4	.0084	.098	13.53	90.59	.370	.349
5	.0094	.110	14.04	89.71	.384	.381
6	.0111	.129	14.89	88.52	.407	.427
7	.0127	.148	16.03	87.36	.438	.469
8	.0134	.156	16.52	86.81	.451	.491
9	.0153	.178	18.51	85.47	.506	.541
10	.0176	.207	19.99	82.65	.546	.606
11	.0195	.227	20.27	82.76	.554	.643
12	.0212	.247	22.41	81.99	.612	.673
13	.0226	.265	22.63	81.23	.618	.701
14	.0245	.286	23.56	80.49	.643	.729
15	.0268	.312	24.72	79.50	.675	.764
16	.0288	.335	25.95	78.66	.709	.790
17	.0302	.352	26.49	78.31	.724	.811
18	.0327	.381	28.64	76.86	.783	.848
19	.0436	.507	31.20	75.07	.853	.933
20	.0454	.528	32.46	74.41	.887	.958
21	.0464	.540	32.72	74.01	.894	.973
22	.0535	.623	34.91	73.65	.954	.981
23	.0566	.659	35.57	73.55	.972	.987
24	.0766	.891	36.32	73.52	.993	.992
25	.0836	.973	36.74	73.46	1.004	.994
26	.0965	1.123	36.82	73.44	1.006	.995
27	.0968	1.126	36.84	73.45	1.007	.994
28	.1135	1.320	36.87	73.44	1.008	.995
29	.1136	1.321	36.87	73.44	1.008	.995
30	.1166	1.356	36.83	73.41	1.007	.996
31	.1236	1.438	37.05	73.40	1.012	.996
32	.1303	1.515	36.85	73.39	1.007	.997
33	.1478	1.719	36.86	73.39	1.008	.996
34	.1651	1.920	36.79	73.40	1.006	.996
35	.1824	2.121	36.83	73.34	.998	.998
36	.2006	2.333	36.79	73.34	1.005	.999
37	.2178	2.533	36.75	73.35	1.004	.998
38	.2357	2.741	37.07	73.33	1.013	.997
39	.2525	2.936	36.85	73.31	1.010	.999
40	.2703	3.143	36.81	73.32	1.009	.999
41	.2875	3.343	36.82	73.36	1.009	.997
42	.3058	3.556	36.83	73.36	1.006	.998
43	.3351	3.897	37.00	73.36	1.011	.997
44	.3653	4.248	36.74	73.41	1.004	.996
45	.3956	4.600	36.82	73.40	.998	.996
46	.4254	4.947	37.01	73.40	1.011	.996
47	.4552	5.293	37.01	73.41	1.011	.996
48	.4955	5.762	36.97	73.37	1.010	.996
49	.5157	5.997	36.96	73.36	1.009	.998
50	.5453	6.341	37.05	73.36	1.012	.998
51	.5756	6.693	36.80	73.31	1.006	1.000
52	.6155	7.156	36.88	73.27	1.008	1.001
53	1.0956	12.739	36.93	73.30	1.006	1.000
54	1.5656	18.205	36.83	73.29	1.001	1.000
55	2.0456	23.796	36.35	73.31	.993	1.000
56	2.5252	29.383	36.66	73.27	1.002	1.001
57	3.0055	34.969	36.57	73.27	.991	1.001

Table 58.

KLDYW807 TAPE 4646F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 20. GRID NO. 3

BOUNDARY LAYER PROPERTIES	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	36.023	36.023
FREE STREAM TEMPERATURE =	77.232	
WALL TEMPERATURE =	99.220	
WALL HEAT FLUX =	.04580	
FREE STREAM DENSITY =	.07460	
FREE STREAM KINEMATIC VISCOSITY =	.0001647	
DENSITY OF FLUID AT WALL =	.07113	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001791	
WALL/FREE STREAM DENSITY RATIO =	.95350	
LOCATION REYNOLDS NUMBER (REX) =	80220.19	
INPUT VALUE OF VELOCITY DELTA =	.01000	
INPUT VALUE OF TEMPERATURE DELTA =	.97000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.09300	
DISPLACEMENT THICKNESS (DELSTAR) =	.01777	.01469
MOMENTUM THICKNESS (THETA) =	.00767	.00693
ENERGY-DISSIPATION THICKNESS =	.01198	.01124
ENTHALPY THICKNESS =	.00042	.00049
SHAPE FACTOR 12 (DELSTAR/THETA) =	2.31645	2.11908
SHAPE FACTOR 22 (ENERGY/THETA) =	1.56166	1.62194
MOMENTUM THICKNESS REYNOLDS NUMBER =	139.66	126.39
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	323.98	267.63
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.19294	-.22803
CLAUSERS 'G' INTEGRAL =	2.45602	1.83653
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.01465	.01420
MOMENTUM THICKNESS - CONSTANT DENSITY =	.00782	.00708
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.87765	2.00655

LOCATION -X- 4.40000

Z = -6 INCHES

K = 0.75 X 10^{-6}

Table 59.

KLEBANOFF TAPE 4646F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 20. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.057	12.78	92.13	.341	.273
2	.0069	.073	13.05	90.85	.382	.322
3	.0078	.081	14.03	90.22	.389	.346
4	.0088	.092	13.41	89.91	.372	.374
5	.0096	.100	15.49	88.75	.429	.403
6	.0111	.120	16.23	87.60	.451	.447
7	.0126	.136	17.58	86.31	.488	.497
8	.0135	.145	18.25	85.62	.507	.516
9	.0154	.166	19.33	84.70	.537	.559
10	.0176	.190	19.90	83.21	.553	.616
11	.0198	.213	21.96	82.16	.609	.657
12	.0218	.235	23.11	81.16	.642	.695
13	.0237	.254	23.94	80.46	.665	.721
14	.0265	.284	24.77	79.65	.688	.746
15	.0285	.306	25.61	79.16	.711	.772
16	.0309	.332	26.46	78.46	.735	.796
17	.0302	.325	27.59	77.92	.766	.820
18	.0364	.392	28.47	76.16	.818	.850
19	.0437	.470	31.63	75.08	.878	.929
20	.0509	.548	33.05	74.26	.918	.960
21	.0583	.628	33.82	73.88	.939	.975
22	.0634	.682	35.11	73.72	.976	.981
23	.0704	.757	34.95	73.55	.970	.986
24	.0763	.821	35.67	73.48	.990	.990
25	.0838	.901	35.81	73.36	.994	.994
26	.0905	.973	35.78	73.36	.993	.994
27	.0964	1.037	36.03	73.37	1.000	.995
28	.1038	1.116	36.06	73.36	1.001	.994
29	.1104	1.187	36.21	73.26	1.005	.999
30	.1164	1.252	36.18	73.26	1.004	.999
31	.1233	1.326	36.22	73.26	1.007	.999
32	.1307	1.406	36.34	73.26	1.009	.999
33	.1375	1.479	36.33	73.25	1.008	.999
34	.1451	1.561	36.21	73.24	1.005	1.000
35	.1524	1.639	36.12	73.26	1.003	.999
36	.1603	1.724	35.97	73.27	.999	.999
37	.2174	2.338	36.17	73.26	1.004	.998
38	.2554	2.747	36.15	73.27	1.004	.999
39	.2623	2.821	36.17	73.27	1.004	.998
40	.2704	2.908	36.14	73.27	1.003	.998
41	.2974	3.199	36.08	73.27	1.002	.999
42	.3060	3.291	36.07	73.26	1.001	.998
43	.3752	4.035	36.15	73.27	1.004	.999
44	.3653	3.929	36.23	73.26	1.006	.998
45	.3855	4.146	36.09	73.27	1.002	.999
46	.4264	4.586	35.97	73.27	.999	.998
47	.4354	4.683	36.06	73.27	1.001	.998
48	.4853	5.219	36.13	73.27	1.003	.999
49	.5144	5.532	35.97	73.26	.999	.999
50	.5465	5.878	36.10	73.26	1.002	.999
51	.5754	6.189	35.93	73.25	.997	.999
52	.6755	6.511	36.16	73.25	1.004	.999
53	1.0854	11.671	36.31	73.25	1.008	.999
54	1.5567	16.876	35.98	73.24	.999	1.000
55	2.0453	21.993	35.96	73.24	.997	1.001
56	2.5252	27.159	35.85	73.24	.995	1.000
57	3.0256	32.539	35.84	73.24	.995	1.000

Table 59.

KLDN-8L7 TAPE 4648P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 15. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	37.517	37.517
FREE STREAM TEMPERATURE =	72.748	
WALL TEMPERATURE =	98.700	
WALL HEAT FLUX =	.04520	
FREE STREAM DENSITY =	.07067	
FREE STREAM KINEMATIC VISCOSITY =	.0001644	
DENSITY OF FLUID AT WALL =	.07120	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001768	
WALL/FREE STREAM DENSITY RATIO =	.95252	
LOCATION REYNOLDS NUMBER (REX) =	159756.94	
INPUT VALUE OF VELOCITY DELTA =	.21000	
INPUT VALUE OF TEMPERATURE DELTA =	.28000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.19000	
DISPLACEMENT THICKNESS (DELSTAR) =	.02674	.02469
MOMENTUM THICKNESS (THETA) =	.01533	.01498
ENERGY-DISSIPATION THICKNESS =	.02668	.02639
ENTHALPY THICKNESS =	.00086	.00091
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.74454	1.66198
SHAPE FACTOR 32 (ENERGY/THETA) =	1.74032	1.76212
MOMENTUM THICKNESS REYNOLDS NUMBER =	291.55	284.85
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	508.62	473.42
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.75192	-.41063
CLAUSERS 'G' INTEGRAL =	3.02645	2.57390
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02723	.02399
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01556	.01521
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.49261	1.57795

LOCATION -X- 8.40000

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 60.

KLLPWEC7 TAPE 4646R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 15. GRID NO. 3

REDUCED PROFILE DATA

N.	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.028	12.30	93.30	.326	.207
2	.0065	.030	13.19	92.23	.352	.249
3	.0075	.040	14.20	91.73	.376	.268
4	.0083	.044	14.64	91.15	.390	.289
5	.0099	.052	16.24	89.55	.433	.335
6	.0111	.059	17.52	89.13	.467	.369
7	.0124	.065	19.06	88.35	.509	.397
8	.0137	.072	18.91	87.95	.504	.414
9	.0155	.082	20.27	87.46	.540	.433
10	.0178	.094	22.04	86.22	.587	.481
11	.0194	.102	22.89	85.25	.610	.516
12	.0212	.112	23.41	84.55	.624	.565
13	.0226	.119	24.76	84.34	.660	.565
14	.0244	.129	25.40	83.05	.677	.601
15	.0266	.140	25.86	82.33	.689	.642
16	.0283	.149	26.85	81.75	.716	.653
17	.0302	.159	27.40	81.65	.730	.655
18	.0365	.192	28.95	79.71	.772	.732
19	.0430	.226	30.74	78.44	.819	.781
20	.0503	.265	32.02	77.26	.853	.826
21	.0564	.297	32.57	76.74	.866	.846
22	.0635	.334	33.09	76.01	.882	.874
23	.0704	.371	34.07	75.23	.908	.904
24	.0764	.402	34.40	75.32	.917	.912
25	.0833	.439	34.92	74.87	.931	.918
26	.0904	.476	35.35	74.45	.942	.933
27	.0964	.508	35.56	74.10	.946	.948
28	.1035	.546	35.93	73.76	.956	.961
29	.1104	.581	36.18	73.73	.964	.962
30	.1170	.616	36.36	73.66	.969	.965
31	.1238	.652	36.67	73.33	.976	.976
32	.1309	.689	36.65	73.13	.977	.985
33	.1474	.776	36.74	73.14	.979	.985
34	.1652	.870	36.80	73.02	.981	.990
35	.1824	.960	37.07	72.91	.993	.994
36	.2005	1.055	37.49	72.86	.999	.996
37	.2174	1.144	37.59	72.82	1.002	.997
38	.2353	1.239	37.58	72.81	1.002	.998
39	.2524	1.329	37.38	72.78	.996	.999
40	.2703	1.425	37.62	72.75	1.003	1.000
41	.2875	1.513	37.69	72.75	1.005	1.000
42	.3055	1.608	37.50	72.76	.999	1.000
43	.3352	1.764	37.41	72.74	.997	1.000
44	.3655	1.924	37.70	72.72	1.005	1.001
45	.3853	2.021	37.71	72.74	1.005	1.000
46	.4183	2.276	37.60	72.74	1.002	1.000
47	.4550	2.396	37.50	72.72	1.000	1.001
48	.4759	2.506	37.49	72.73	.999	1.001
49	.5156	2.715	37.52	72.73	1.000	1.001
50	.5453	2.870	37.51	72.72	1.000	1.001
51	.5754	3.029	37.53	72.71	1.000	1.001
52	.6058	3.189	37.49	72.73	.999	1.001
53	1.0853	5.712	37.36	72.71	.996	1.002
54	1.5656	8.240	37.42	72.73	.997	1.001
55	2.0458	10.768	37.57	72.74	1.001	1.000
56	2.5052	13.201	37.49	72.72	.999	1.001
57	3.0058	15.819	37.71	72.72	1.005	1.001

Table 60.

ALLMAN.7 TAPE 4648F - FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 16. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y=.35
FREE STREAM VELOCITY =	37.186	37.186
FREE STREAM TEMPERATURE =	72.916	
WALL TEMPERATURE =	99.660	
WALL HEAT FLUX =	.04630	
FREE STREAM DENSITY =	.07464	
FREE STREAM KINEMATIC VISCOSITY =	.0001645	
DENSITY OF FLUID AT WALL =	.07107	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001794	
WALL/FREE STREAM DENSITY RATIO =	.95215	
LOCATION REYNOLDS NUMBER (REX) =	158256.69	
INPUT VALUE OF VELOCITY DELTA =	.21000	
INPUT VALUE OF TEMPERATURE DELTA =	.24000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.18000	
DISPLACEMENT THICKNESS (DELSTAR) =	.02819	.02502
MOMENTUM THICKNESS (THETA) =	.01516	.01460
ENERGY-DISSIPATION THICKNESS =	.02596	.02592
ENTHALPY THICKNESS =	.00065	.00095
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.85997	1.69027
SHAPE FACTOR 32 (ENERGY/THETA) =	1.71297	1.75136
MOMENTUM THICKNESS REYNOLDS NUMBER =	285.53	276.65
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	531.08	471.33
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.37848	-.41213
CLAUSERS 'G' INTEGRAL =	3.49592	2.64411
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02473	.02468
MOMENTUM THICKNESS - CONSTANT DENSITY =	.01541	.01505
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.60456	1.59949

LOCATION -X- 8.40000

Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 61.

KLDM•FC7 TAPE 4646F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 16. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0055	.0[illegible]9	9.41	96.47	.263	.120
2	.0066	[illegible]	10.86	95.95	.292	.138
3	.0077	.04[illegible]	10.57	94.80	.284	.190
4	.0081	.045	12.24	93.84	.329	.216
5	.0095	.05[illegible]	14.[illegible]	92.41	.384	.272
6	.0112	[illegible]	15.73	91.24	.423	.312
7	.0119	.0[illegible]6	15.7[illegible]	90.55	.422	.325
8	.0143	[illegible]	17.74	89.56	.477	.378
9	.0163	.091	18.78	88.75	.494	.407
10	.0177	.1[illegible]	[illegible]	87.60	.540	.451
11	.0196	.1[illegible]	21.25	86.76	.572	.483
12	.021[illegible]	.11[illegible]	22.[illegible]0	86.41	.594	.496
13	[illegible]	.1[illegible]	23.74	85.[illegible]	.628	.529
14	[illegible]	.14[illegible]	2[illegible].[illegible]4	84.[illegible]	.633	.583
15	.0273	.1[illegible]	24.92	83.[illegible]	.67[illegible]	.620
16	.0287	.16[illegible]	2[illegible].[illegible]	82.[illegible]	.682	.637
17	.0[illegible]81	.1[illegible]	27.54	80.91	.741	.701
18	.04[illegible]	.2[illegible]	29.76	79.17	.79[illegible]	.766
19	.045[illegible]	.2[illegible]4	3[illegible].[illegible]0	78.[illegible]	.67[illegible]	.8[illegible]7
20	.05[illegible]	.3[illegible]6	31.[illegible]	77.[illegible]	.65[illegible]	.836
21	[illegible]	.3[illegible]4	3[illegible].[illegible]4	76.[illegible]5	.68[illegible]	.870
22	[illegible]	.3[illegible]	33.43	75.7[illegible]	.9[illegible]4	.895
23	[illegible]	.41[illegible]	34.[illegible]1	75.41	.920	.907
24	[illegible]	.4[illegible]7	34.10	74.[illegible]4	.919	.920
25	[illegible]1	.4[illegible]	34.[illegible]6	74.[illegible]4	.941	.947
26	[illegible]	.5[illegible]	3[illegible].[illegible]1	74.10	.947	.956
27	.1[illegible]1[illegible]	.56[illegible]	35.75	73.91	.961	.963
28	.1[illegible]8[illegible]	.6[illegible]	35.61	73.[illegible]	.958	.965
29	.114[illegible]	.67[illegible]	35.97	73.7[illegible]	.965	.970
30	.1[illegible]	.67[illegible]	36.7[illegible]	73.[illegible]5	.976	.975
31	.1[illegible]9[illegible]	.71[illegible]	36.4[illegible]	73.[illegible]4	.98[illegible]	.977
32	.1463	.81[illegible]	36.[illegible]	73.16	.992	.991
33	.1636	.9[illegible]	36.75	73.1[illegible]	.986	.992
34	.1812	1.0[illegible]7	37.0[illegible]	73.[illegible]1	.996	.996
35	.1993	1.1[illegible]7	37.[illegible]7	73.[illegible]4	1.002	.995
36	.2162	1.2[illegible]	37.[illegible]6	7[illegible].[illegible]5	.995	.997
37	.2342	1.3[illegible]1	37.[illegible]9	72.9[illegible]	1.003	1.000
38	.2513	1.34[illegible]	37.11	72.90	.998	1.001
39	.269[illegible]	1.4[illegible]	37.[illegible]	72.9[illegible]	1.004	1.000
40	.2[illegible]6[illegible]	1.5[illegible]	37.[illegible]	72.[illegible]5	1.001	1.000
41	.3[illegible]3[illegible]	1.6[illegible]	37.[illegible]	72.[illegible]6	1.005	1.001
42	.3[illegible]76	1.8[illegible]	37.[illegible]5	72.[illegible]	1.002	1.002
43	.3[illegible]41	2.0[illegible]	37.61	72.[illegible]	1.012	1.002
44	.3[illegible]4[illegible]	2.1[illegible]	37.[illegible]8	72.[illegible]	1.003	1.002
45	.424[illegible]	2.3[illegible]7	37.17	72.[illegible]	1.00[illegible]	1.004
46	.4[illegible]	2.5[illegible]1	37.1[illegible]	72.[illegible]	1.00[illegible]	1.00[illegible]
47	.4[illegible]4[illegible]	2.6[illegible]	37.6[illegible]	72.[illegible]	1.01[illegible]	1.00[illegible]
48	.5142	2.6[illegible]7	37.[illegible]4	72.[illegible]	1.00[illegible]	1.00[illegible]
49	.543[illegible]	3.0[illegible]2	37.10	72.[illegible]	1.00[illegible]	1.00[illegible]
50	.574[illegible]	3.1[illegible]0	37.[illegible]5	72.8[illegible]	.996	1.00[illegible]
51	.6[illegible]42	3.3[illegible]7	37.[illegible]4	72.[illegible]	1.003	1.00[illegible]
52	1.0[illegible]4[illegible]	6.0[illegible]2	37.15	72.81	.999	1.00
53	1.5[illegible]4[illegible]	6.6[illegible]	36.92	72.[illegible]	.993	1.00[illegible]
54	2.[illegible]441	11.3[illegible]6	37.15	72.[illegible]	.995	1.00[illegible]
55	2.[illegible]237	14.0[illegible]1	36.97	72.[illegible]	.991	1.00[illegible]
56	[illegible].[illegible]41	16.69[illegible]	36.[illegible]	72.8[illegible]	.992	1.00[illegible]

Table 61.

KLDNK87 TAPE 4048R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 17. GRID NO. 3

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	37.664	37.664
FREE STREAM TEMPERATURE	=	73.264	
WALL TEMPERATURE	=	98.760	
WALL HEAT FLUX	=	.04910	
FREE STREAM DENSITY	=	.07459	
FREE STREAM KINEMATIC VISCOSITY	=	.0001647	
DENSITY OF FLUID AT WALL	=	.07119	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001769	
WALL/FREE STREAM DENSITY RATIO	=	.95431	
LOCATION REYNOLDS NUMBER (REX)	=	1596500.92	
INPUT VALUE OF VELOCITY DELTA	=	.19000	
INPUT VALUE OF TEMPERATURE DELTA	=	.26000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.18500	
DISPLACEMENT THICKNESS (DELSTAR)	=	.02821	.02533
MOMENTUM THICKNESS (THETA)	=	.01561	.01515
ENERGY-DISSIPATION THICKNESS	=	.02666	.02666
ENTHALPY THICKNESS	=	.00082	.00090
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.80687	1.66846
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.72061	1.75641
MOMENTUM THICKNESS REYNOLDS NUMBER	=	297.05	286.66
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	536.74	481.96
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS "DELTA" INTEGRAL	=	-.27971	-.42058
CLAUSERS "G" INTEGRAL	=	3.41899	2.67299
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02473	.02444
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01565	.01541
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.58036	1.58567

LOCATION -X- 8.40000

Z = -6 INCHES

K = 0.75 X 10^{-6}

Table 62.

KLCPW8C7 TAPE 4648R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 17. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0[illegible]	.0[illegible]	11.[illegible]	94.[illegible]	.301	.150
2	.0[illegible]64	.0[illegible]35	12.[illegible]6	94.[illegible]	.321	.166
3	.0[illegible]75	.0041	12.[illegible]9	93.[illegible]	.335	.224
4	.0[illegible]84	.0046	13.69	92.[illegible]	.364	.253
5	.0[illegible]94	.0051	14.[illegible]9	91.71	.383	.277
6	.0[illegible]112	.0061	15.98	90.61	.422	.326
7	.0[illegible]129	.0070	16.[illegible]6	89.[illegible]	.442	.351
8	.0[illegible]154	.0083	17.03	89.42	.453	.367
9	.0[illegible]187	.0085	19.14	87.74	.509	.433
10	.0[illegible]176	.0094	20.19	86.[illegible]	.537	.466
11	.0[illegible]195	.0106	21.45	86.[illegible]	.570	.490
12	.0[illegible]212	.0115	22.34	85.[illegible]	.594	.520
13	.0[illegible]226	.0122	22.98	84.[illegible]	.608	.545
14	.0[illegible]246	.0133	24.06	84.41	.640	.563
15	.0[illegible]265	.0143	25.07	83.[illegible]	.667	.585
16	.0[illegible]285	.0154	26.09	82.[illegible]	.693	.616
17	.0[illegible]301	.0163	26.90	82.[illegible]	.691	.646
18	.0[illegible]364	.0197	28.23	81.[illegible]	.751	.713
19	.0[illegible]438	.0237	30.72	79.[illegible]	.818	.788
20	.0[illegible]505	.0273	31.55	77.[illegible]	.839	.840
21	.0[illegible]566	.0306	32.53	76.[illegible]	.865	.859
22	.0[illegible]633	.0342	33.60	76.[illegible]	.874	.881
23	.0[illegible]700	.0378	34.77	75.47	.914	.913
24	.0[illegible]763	.0413	35.64	75.[illegible]	.931	.921
25	.0[illegible]835	.0452	36.83	75.18	.955	.925
26	.0[illegible]903	.0488	37.17	74.91	.935	.935
27	.0[illegible]965	.0521	37.[illegible]	74.[illegible]	.944	.951
28	.1[illegible]038	.0560	37.66	74.[illegible]	.948	.961
29	.1[illegible]105	.0597	37.67	74.[illegible]	.970	.961
30	.1[illegible]163	.0629	37.[illegible]	74.1[illegible]	.965	.964
31	.1[illegible]237	.0669	37.[illegible]	73.9[illegible]	.983	.975
32	.1[illegible]304	.0705	37.[illegible]	73.7[illegible]	.973	.982
33	.1[illegible]375	.0757	36.62	73.66	.974	.985
34	.1[illegible]442	.0803	37.24	73.[illegible]	.990[illegible]	.990
35	.1[illegible]627	.0904	37.[illegible]	73.[illegible]	.995	.993
36	.2[illegible]005	1.0[illegible]4	37.[illegible]	73.[illegible]	.998	.996
37	.2[illegible]175	1.[illegible]76	37.74	73.[illegible]	1.004	.997
38	.2[illegible]354	1.[illegible]73	37.[illegible]	73.[illegible]	.998	.998
39	.2[illegible]525	1.[illegible]65	37.[illegible]	73.[illegible]	.995	1.000
40	.2[illegible]703	1.4451	37.64	73.28	.998	.999
41	.2[illegible]873	1.[illegible]63	37.61	73.[illegible]	1.000	1.001
42	.3[illegible]057	1.[illegible]53	37.69	73.[illegible]	1.002	1.000
43	.3[illegible]252	1.[illegible]12	37.67	73.[illegible]	.999	1.000
44	.3[illegible]569	1.976	37.70	73.[illegible]	1.004	1.000
45	.3[illegible]953	2.[illegible]37	37.[illegible]	73.[illegible]	.999	1.001
46	.4[illegible]068	2.371	37.[illegible]	73.[illegible]	.998	1.001
47	.4[illegible]554	2.4[illegible]	37.[illegible]	73.[illegible]	.994	1.000
48	.4[illegible]953	2.6[illegible]	37.67	73.[illegible]	1.002	1.001
49	.5[illegible]554	2.7[illegible]	37.[illegible]	73.[illegible]	1.004	1.001
50	.6[illegible]454	2.[illegible]4[illegible]	37.[illegible]	73.[illegible]	.997	1.001
51	.5[illegible]705	3.111	37.[illegible]	73.[illegible]	.993	1.001
52	.6[illegible]955	3.272	37.[illegible]	73.26	.998	1.000
53	1.0[illegible]66	5.866	37.37	73.[illegible]	.994	1.000
54	1.5[illegible]52	6.461	37.44	73.[illegible]	.996	1.000
55	2.0[illegible]55	11.[illegible]7	37.[illegible]	73.[illegible]	.993	1.000
56	2.5[illegible]5	13.6[illegible]	37.[illegible]	73.[illegible]	.996	1.000
57	3.0[illegible]53	16.245	37.[illegible]	73.[illegible]	.992	1.000

Table 62.

KLCM#207 TAPE 4648P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

PLN NO. 4. POINT 12. GRID NO. 3

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	39.793	39.793
FREE STREAM TEMPERATURE	=	77.629	
WALL TEMPERATURE	=	98.270	
WALL HEAT FLUX	=	.04660	
FREE STREAM DENSITY	=	.07377	
FREE STREAM KINEMATIC VISCOSITY	=	.0001666	
DENSITY OF FLUID AT WALL	=	.07051	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001804	
WALL/FREE STREAM DENSITY RATIO	=	.95564	
LOCATION REYNOLDS NUMBER (REX)	=	246625.35	
INPUT VALUE OF VELOCITY DELTA	=	.29000	
INPUT VALUE OF TEMPERATURE DELTA	=	.40000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.65000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03166	.03122
MOMENTUM THICKNESS (THETA)	=	.01961	.01965
ENERGY-DISSIPATION THICKNESS	=	.03483	.03496
ENTHALPY THICKNESS	=	.00127	.00129
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.62635	1.58846
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.77659	1.77875
MOMENTUM THICKNESS REYNOLDS NUMBER	=	393.25	391.22
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	634.68	621.43
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.44663	-.53517
CLAUSERS 'G' INTEGRAL	=	3.43857	3.26165
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02762	.02994
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01967	.01992
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.40010	1.50311

LOCATION -X- 12.40000

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 63.

KLEBANOFF TAPE 464EE- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 12. GRID NO. 3

REDUCED PROFILE DATA

P	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0056	.023	16.52	92.71	.322	.225
2	.0068	.027	15.95	92.24	.351	.245
3	.0082	.033	15.24	90.91	.383	.299
4	.0096	.039	17.17	90.01	.432	.336
5	.0111	.044	19.15	89.13	.481	.371
6	.0126	.051	20.49	88.13	.515	.411
7	.0140	.056	22.13	87.05	.556	.456
8	.0164	.066	23.78	86.10	.598	.494
9	.0182	.073	24.59	85.62	.609	.501
10	.0193	.077	25.80	85.42	.646	.522
11	.0217	.087	26.48	84.85	.665	.545
12	.0235	.094	26.95	84.19	.677	.571
13	.0256	.103	27.68	83.66	.699	.593
14	.0278	.109	28.36	83.25	.713	.610
15	.0334	.134	30.26	81.76	.763	.669
16	.0403	.161	31.40	80.75	.789	.711
17	.0478	.191	32.55	80.17	.819	.735
18	.0534	.214	33.26	79.40	.836	.766
19	.0606	.243	33.78	78.85	.849	.798
20	.0676	.271	34.77	78.28	.856	.811
21	.0739	.296	34.72	77.99	.874	.825
22	.0804	.322	35.12	77.58	.887	.840
23	.0878	.351	35.45	76.99	.899	.864
24	.0938	.375	35.68	76.91	.900	.867
25	.1008	.403	36.77	76.55	.924	.882
26	.1078	.431	36.54	76.33	.918	.890
27	.1134	.454	36.89	76.32	.927	.891
28	.1166	.466	37.25	75.93	.936	.906
29	.1277	.511	37.47	75.65	.942	.916
30	.1449	.579	38.07	75.11	.957	.940
31	.1621	.648	38.41	74.81	.965	.952
32	.1794	.718	38.79	74.61	.975	.960
33	.1977	.791	39.26	74.32	.987	.972
34	.2148	.859	39.42	74.16	.991	.977
35	.2320	.931	39.21	74.16	.985	.976
36	.2495	.998	39.61	73.93	.995	.986
37	.2674	1.070	39.69	73.90	.997	.989
38	.2848	1.139	39.89	73.79	1.002	.994
39	.3026	1.211	39.96	73.78	1.004	.994
40	.3222	1.289	39.92	73.69	.993	.996
41	.3626	1.451	40.00	73.69	1.005	.997
42	.3823	1.529	39.72	73.66	.998	.999
43	.4022	1.609	39.59	73.65	.994	.999
44	.4522	1.811	39.61	73.62	.995	1.000
45	.4827	1.931	39.83	73.62	1.001	1.001
46	.5166	2.067	40.01	73.62	1.007	1.002
47	.5425	2.171	39.95	73.60	1.005	1.001
48	.5724	2.290	39.97	73.59	1.005	1.001
49	.6022	2.411	40.09	73.60	1.007	1.001
50	1.0029	4.371	39.74	73.56	.999	1.003
51	1.5629	6.251	39.96	73.59	1.004	1.001
52	2.0427	8.171	39.63	73.56	.996	1.003
53	2.5222	10.089	39.63	73.45	1.001	1.006
54	3.0028	12.011	40.13	73.43	1.006	1.008

Table 63.

KLEMMER7 TAPE 4648F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 13. GRID NO. 3

BOUNDARY LAYER PROPERTIES

		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	39.745	39.745
FREE STREAM TEMPERATURE	=	73.663	
WALL TEMPERATURE	=	98.720	
WALL HEAT FLUX	=	.04580	
FREE STREAM DENSITY	=	.07377	
FREE STREAM KINEMATIC VISCOSITY	=	.0001666	
DENSITY OF FLUID AT WALL	=	.07046	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001807	
WALL/FREE STREAM DENSITY RATIO	=	.95513	
LOCATION REYNOLDS NUMBER (REX)	=	246505.67	
INPUT VALUE OF VELOCITY DELTA	=	.24000	
INPUT VALUE OF TEMPERATURE DELTA	=	.40000	
CALCULATED DELTA	=		
DELTA 99.5% INPUT	=	.24000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.02995	.02903
MOMENTUM THICKNESS (THETA)	=	.01808	.01800
ENERGY-DISSIPATION THICKNESS	=	.03194	.03152
ENTHALPY THICKNESS	=	.00120	.00123
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.65699	1.61259
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.76702	1.77294
MOMENTUM THICKNESS REYNOLDS NUMBER	=	359.38	357.92
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	595.49	577.17
SKIN FRICTION COEFFICIENT	=		
FRICTION VELOCITY	=		
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		
CLAUSERS 'DELTA' INTEGRAL	=	-.41255	-.49174
CLAUSERS 'G' INTEGRAL	=	3.26187	2.96831
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.02667	.02764
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.01833	.01826
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.42210	1.52441

LOCATION -X- 12.40000

Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 64.

KLDMW907 TAPE 4646R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 13. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0054	.023	12.41	92.62	.312	.235
2	.0065	.027	13.02	92.64	.328	.267
3	.0075	.031	15.69	91.33	.402	.295
4	.0084	.035	16.22	90.96	.408	.326
5	.0094	.039	18.03	89.98	.454	.354
6	.0111	.046	19.81	89.06	.499	.386
7	.0126	.053	20.87	88.65	.525	.400
8	.0136	.057	21.07	88.52	.562	.407
9	.0154	.064	22.49	87.26	.566	.457
10	.0178	.074	24.35	85.88	.613	.514
11	.0196	.082	24.71	85.38	.622	.534
12	.0212	.088	26.21	84.69	.661	.552
13	.0226	.094	26.68	84.42	.670	.578
14	.0246	.103	27.20	84.17	.684	.585
15	.0266	.111	27.74	83.84	.698	.594
16	.0284	.118	28.58	83.33	.719	.614
17	.0302	.126	29.37	82.69	.739	.640
18	.0327	.136	31.13	81.24	.783	.698
19	.0346	.144	31.98	80.31	.805	.735
20	.0367	.153	32.80	79.47	.825	.768
21	.0389	.162	33.78	78.22	.850	.778
22	.0409	.170	34.59	78.36	.870	.813
23	.0427	.178	34.73	77.84	.874	.833
24	.0444	.185	35.16	77.41	.885	.851
25	.0464	.193	35.67	76.96	.897	.866
26	.0488	.203	36.21	76.56	.911	.884
27	.0513	.214	36.61	76.45	.921	.887
28	.0535	.223	36.98	76.14	.930	.901
29	.0559	.233	36.95	76.00	.930	.907
30	.0567	.236	37.39	75.98	.941	.909
31	.0590	.246	37.62	75.48	.944	.927
32	.0603	.251	38.01	75.19	.956	.939
33	.0626	.261	38.37	74.95	.965	.947
34	.0652	.272	38.69	74.67	.974	.960
35	.0674	.281	39.17	74.41	.986	.970
36	.0694	.289	39.29	74.22	.988	.978
37	.0718	.299	39.44	74.11	.992	.982
38	.0735	.306	39.58	74.03	.995	.985
39	.0749	.312	39.68	73.97	.998	.986
40	.0763	.318	39.82	73.92	.998	.994
41	.0778	.324	39.95	73.75	1.005	.997
42	.0788	.328	39.97	73.74	1.006	.997
43	.0802	.334	40.26	73.72	1.013	.998
44	.0816	.340	40.27	73.69	1.013	.999
45	.0833	.347	40.40	73.66	1.011	1.000
46	.0853	.355	40.47	73.66	1.008	1.000
47	.0866	.361	40.63	73.66	1.008	1.000
48	.0886	.369	40.76	73.66	1.005	1.000
49	.0910	.379	40.87	73.65	1.006	1.000
50	.0937	.390	40.99	73.66	1.009	1.000
51	.0958	.399	40.97	73.64	1.001	1.001
52	.0979	.408	40.98	73.66	1.000	1.000
53	1.0953	4.563	41.00	73.63	1.000	1.000
54	1.0984	4.576	40.98	73.66	.999	.999
55	2.0956	8.523	39.82	73.66	1.002	.999
56	2.0992	10.522	39.59	73.65	.996	1.001
57	3.0957	12.524	39.42	73.66	.992	.999

Table 64.

KLEMP&C7 TAPE 4E48E- FILES 17-36, RUN 4, PTS.1-2D 11/11/8D

PLN NO. 4. POINT 14. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	40.003	40.003
FREE STREAM TEMPERATURE =	72.759	
WALL TEMPERATURE =	96.960	
WALL HEAT FLUX =	.04552	
FREE STREAM DENSITY =	.07467	
FREE STREAM KINEMATIC VISCOSITY =	.0001644	
DENSITY OF FLUID AT WALL =	.07142	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001778	
WALL/FREE STREAM DENSITY RATIO =	.95652	
LOCATION REYNOLDS NUMBER (REX) =	251449.38	
INPUT VALUE OF VELOCITY DELTA =	.71000	
INPUT VALUE OF TEMPERATURE DELTA =	.37000	
CALCULATED DELTA =		
DELTA 99.5% INPUT =	.28000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03174	.03166
MOMENTUM THICKNESS (THETA) =	.02002	.01992
ENERGY-DISSIPATION THICKNESS =	.03571	.03559
ENTHALPY THICKNESS =	.00116	.00117
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.58494	1.55947
SHAPE FACTOR 32 (ENERGY/THETA) =	1.78315	1.78719
MOMENTUM THICKNESS REYNOLDS NUMBER =	406.07	403.66
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	643.60	629.81
SKIN FRICTION COEFFICIENT =		
FRICTION VELOCITY =		
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		
CLAUSERS 'DELTA' INTEGRAL =	-.44927	-.53164
CLAUSERS 'G' INTEGRAL =	3.26529	3.07762
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02793	.02986
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02027	.02016
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.37784	1.48261

LOCATION -X- 12.40000

Z = -6 INCHES

K = 0.75 X 10^{-6}

Table 65.

KLEMWEI7 TAPE 4646P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 14. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA
1	.0053	.015	14.59	90.77	.352	.256
2	.0068	.024	15.43	89.46	.386	.310
3	.0076	.027	16.02	89.02	.400	.328
4	.0085	.030	16.73	88.55	.416	.347
5	.0098	.035	17.75	87.53	.444	.390
6	.0111	.040	19.74	86.55	.493	.415
7	.0125	.045	21.11	86.45	.528	.434
8	.0137	.049	21.97	85.95	.549	.453
9	.0154	.055	23.26	85.15	.590	.488
10	.0177	.063	24.94	84.41	.623	.519
11	.0193	.069	25.21	83.50	.630	.544
12	.0212	.076	26.24	83.55	.656	.575
13	.0225	.081	27.22	82.50	.680	.581
14	.0243	.087	27.51	82.41	.686	.601
15	.0264	.094	28.06	81.76	.702	.620
16	.0287	.102	28.96	81.36	.724	.644
17	.0302	.108	29.79	81.16	.745	.652
18	.0363	.130	30.68	80.04	.767	.699
19	.0436	.156	32.03	79.32	.801	.741
20	.0507	.181	33.10	78.32	.827	.770
21	.0564	.202	33.95	77.92	.850	.787
22	.0634	.227	34.56	77.35	.865	.801
23	.0706	.252	35.01	76.75	.875	.835
24	.0763	.273	35.22	76.35	.881	.862
25	.0838	.299	35.86	75.80	.896	.872
26	.0907	.324	36.01	75.56	.900	.884
27	.0966	.345	36.39	75.15	.907	.901
28	.1030	.370	36.86	75.04	.922	.906
29	.1107	.395	37.18	74.84	.930	.914
30	.1166	.417	37.37	74.53	.935	.910
31	.1235	.441	37.53	74.36	.936	.912
32	.1306	.467	37.75	74.36	.944	.925
33	.1477	.528	38.21	73.90	.950	.953
34	.1652	.590	38.72	73.87	.960	.954
35	.1828	.653	39.05	73.60	.976	.965
36	.2005	.716	39.60	73.45	.990	.970
37	.2177	.778	39.77	73.16	.984	.984
38	.2355	.842	39.55	73.05	.989	.986
39	.2524	.902	39.65	73.02	.991	.989
40	.2705	.966	39.58	72.90	.989	.994
41	.2873	1.026	39.72	72.83	.993	.997
42	.3057	1.092	39.85	72.84	.996	.997
43	.3352	1.197	39.91	72.85	.996	.996
44	.3655	1.305	40.12	72.79	1.003	.999
45	.3957	1.413	39.98	72.77	.995	1.000
46	.4256	1.520	39.82	72.77	.996	1.000
47	.4555	1.627	40.14	72.74	1.004	1.001
48	.4850	1.734	39.97	72.75	.999	1.000
49	.5156	1.842	39.78	72.73	.994	1.001
50	.5453	1.948	39.78	72.74	.994	1.001
51	.5753	2.055	39.87	72.73	.997	1.001
52	.6057	2.163	40.12	72.73	1.003	1.001
53	1.0854	3.877	39.81	72.74	.995	1.001
54	1.5654	5.592	39.88	72.76	.997	1.000
55	2.0456	7.306	39.81	72.74	.995	1.001
56	2.5251	9.018	39.64	72.72	.991	1.002
57	3.0055	10.734	39.51	72.73	.988	1.001

Table 65.

KLEMW807 TAPE 4646P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 10. GRID NO. 3

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	40.871	40.871
FREE STREAM TEMPERATURE	=	73.015	
WALL TEMPERATURE	=	96.760	
WALL HEAT FLUX	=	.04660	
FREE STREAM DENSITY	=	.07366	
FREE STREAM KINEMATIC VISCOSITY	=	.0001663	
DENSITY OF FLUID AT WALL	=	.07279	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001792	
WALL/FREE STREAM DENSITY RATIO	=	.98853	
LOCATION REYNOLDS NUMBER (REX)	=	335982.23	
INPUT VALUE OF VELOCITY DELTA	=	.43000	
INPUT VALUE OF TEMPERATURE DELTA	=	.58000	
CALCULATED DELTA	=		.27214
DELTA 99.5% INPUT	=	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03955	.03768
MOMENTUM THICKNESS (THETA)	=	.02378	.02419
ENERGY-DISSIPATION THICKNESS	=	.04225	.04308
ENTHALPY THICKNESS	=	.00164	.00170
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.66361	1.55733
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.77653	1.78078
MOMENTUM THICKNESS REYNOLDS NUMBER	=	487.26	495.66
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	610.32	771.91
SKIN FRICTION COEFFICIENT	=	.005588	
FRICTION VELOCITY	=	2.20656	
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		-.04398
CLAUSERS 'DELTA' INTEGRAL	=	-.59959	-.66713
CLAUSERS 'C' INTEGRAL	=	4.76006	3.95173
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.03513	.03602
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.02467	.02459
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.45946	1.47015

LOCATION -X- 16.40000

Z = CENTERLINE

$K = 0.75 \times 10^{-6}$

Table 66.

WLDMWRL7 TAPE 4648P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 10. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE / UTAU	U(+)	T(+)	Y(+)
1	.0056	.021	6.65	90.11	.163	.258	-15.507	3.016	4.783	5.778
2	.0066	.024	8.91	89.55	.216	.283	-14.484	4.039	5.236	6.804
3	.0081	.030	11.91	88.64	.291	.322	-13.125	5.398	5.967	8.344
4	.0096	.035	14.60	87.97	.357	.351	-11.905	6.616	6.510	9.863
5	.0107	.039	15.42	87.38	.377	.377	-11.536	6.987	6.963	11.012
6	.0124	.046	18.05	86.27	.442	.425	-10.341	8.182	7.680	12.757
7	.0144	.053	20.49	85.45	.501	.460	-9.238	9.285	8.532	14.809
8	.0164	.060	22.5[illegible]	85.07	.553	.477	-8.289	10.234	8.646	16.862
9	.0182	.067	23.36	84.35	.571	.506	-7.938	10.584	9.422	18.709
10	.0196	.072	25.08	83.87	.614	.529	-7.156	11.367	9.808	20.146
11	.0214	.079	26.08	83.34	.636	.552	-6.701	11.822	10.232	21.993
12	.0239	.088	26.66	83.11	.652	.562	-6.442	12.081	10.419	24.559
13	.0256	.094	26.78	82.5[illegible]	.655	.575	-6.386	12.137	10.670	26.303
14	.0271	.100	27.75	82.[illegible]	.679	.587	-5.947	12.576	10.692	27.843
15	.0334	.123	29.93	81.42	.732	.635	-4.959	13.564	11.780	34.308
16	.0406	.149	31.15	80.52	.762	.674	-4.408	14.115	12.501	41.697
17	.0476	.175	32.25	79.84	.789	.704	-3.906	14.617	13.053	48.861
18	.0534	.196	32.69	79.42	.800	.722	-3.708	14.814	13.388	54.833
19	.0606	.223	33.21	79.02	.813	.740	-3.471	15.052	13.713	62.223
20	.0676	.249	34.14	78.25	.835	.771	-3.051	15.471	14.[illegible]95	69.406
21	.0734	.270	34.34	77.96	.840	.785	-2.959	15.564	14.556	75.359
22	.0807	.297	34.84	78.02	.852	.793	-2.733	15.789	14.517	82.851
23	.0873	.321	35.12	77.54	.859	.804	-2.606	15.917	14.699	89.624
24	.0938	.345	35.92	77.13	.879	.821	-2.245	16.278	15.228	96.295
25	.1004	.369	35.95	76.87	.890	.833	-2.231	16.291	15.441	103.068
26	.1078	.396	36.44	76.66	.892	.842	-2.007	16.516	15.608	110.662
27	.1134	.417	36.54	76.47	.894	.850	-1.961	16.562	15.763	116.410
28	.1206	.443	36.49	76.30	.893	.858	-1.988	16.535	15.900	123.799
29	.1276	.469	37.54	76.22	.919	.861	-1.509	17.013	15.958	130.983
30	.1444	.531	38.23	75.95	.935	.873	-1.197	17.326	16.178	148.224
31	.1622	.596	38.82	75.15	.950	.907	-.929	17.594	16.624	166.491
32	.1794	.659	39.09	74.90	.957	.916	-.805	17.717	17.026	184.143
33	.1975	.726	39.14	74.53	.958	.934	-.784	17.739	17.321	202.719
34	.2146	.789	39.62	74.50	.969	.936	-.566	17.957	17.349	220.268
35	.2330	.856	39.89	74.22	.976	.956	-.444	18.078	17.733	239.151
36	.2495	.917	40.20	74.03	.984	.956	-.305	18.218	17.723	256.065
37	.2675	.983	40.70	73.91	.996	.961	-.076	18.447	17.618	274.557
38	.2844	1.045	40.92	73.75	.999	.966	-.025	18.498	17.953	291.901
39	.3026	1.112	40.62	73.52	.994	.978	-.113	18.410	18.132	310.579
40	.3322	1.221	40.97	73.40	1.002	.983	.043	18.566	18.234	340.957
41	.3624	1.332	41.03	73.27	1.004	.989	.070	18.593	18.332	371.950
42	.3924	1.442	40.70	73.24	.996	.990	-.076	18.447	18.360	402.738
43	.4226	1.553	41.13	73.23	1.006	.990	.119	18.641	18.364	433.731
44	.4525	1.663	40.84	73.16	.999	.994	-.012	18.510	18.422	464.417
45	.4826	1.774	40.76	73.16	.997	.993	-.049	18.474	18.404	495.513
46	.5125	1.884	41.01	73.12	1.003	.995	.061	18.584	18.456	526.095
47	.5424	1.993	40.99	73.11	1.003	.996	.055	18.578	18.466	556.676
48	.5726	2.104	41.08	73.07	1.005	.998	.096	18.619	18.496	587.671
49	.6026	2.214	40.93	73.06	1.001	.997	.026	18.549	18.491	618.460
50	1.0825	3.979	40.79	73.00	.998	1.001	-.039	18.484	18.555	1110.965
51	1.5624	5.741	41.30	72.97	1.008	1.002	.146	18.671	18.577	1603.471
52	2.0424	7.505	41.20	72.98	1.006	1.001	.151	18.673	18.568	2096.079
53	2.5222	9.268	41.35	72.97	1.009	1.002	.172	18.695	18.577	2588.462
54	3.0026	11.073	41.32	73.01	1.011	1.000	.205	18.728	18.541	3081.501

Table 66.

KLDMAC7 TAPE 46485- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 11. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	42.388	42.388
FREE STREAM TEMPERATURE =	77.445	
WALL TEMPERATURE =	96.995	
WALL HEAT FLUX =	.04760	
FREE STREAM DENSITY =	.07360	
FREE STREAM KINEMATIC VISCOSITY =	.0001665	
DENSITY OF FLUID AT WALL =	.07068	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001797	
WALL/FREE STREAM DENSITY RATIO =	.95771	
LOCATION REYNOLDS NUMBER (REX) =	347952.89	
INPUT VALUE OF VELOCITY DELTA =	.40000	
INPUT VALUE OF TEMPERATURE DELTA =	1.09000	
CALCULATED DELTA =		.30697
DELTA 99.5% INPUT =	.38000	
DISPLACEMENT THICKNESS (DELSTAR) =	.02917	.03870
MOMENTUM THICKNESS (THETA) =	.02532	.02543
ENERGY-DISSIPATION THICKNESS =	.04545	.04563
ENTHALPY THICKNESS =	.00182	.00183
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.54697	1.52204
SHAPE FACTOR 32 (ENERGY/THETA) =	1.79460	1.79435
MOMENTUM THICKNESS REYNOLDS NUMBER =	537.25	539.50
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	631.11	821.14
SKIN FRICTION COEFFICIENT =	.005594	
FRICTION VELOCITY =	2.29072	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.12519
CLAUSERS 'DELTA' INTEGRAL =	-.59504	-.66466
CLAUSERS 'G' INTEGRAL =	4.05000	3.85412
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03482	.03700
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02563	.02574
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.35850	1.43722

LOCATION -Y- 16.40000

Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 67.

NLEMN9C7 TAPE 4646P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 11. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE/UTAU	U(+)	T(+)	Y(+)
1	.0053	.014	12.79	91.86	.296	.217	-13.096	5.406	4.172	5.662
2	.0067	.018	13.76	91.30	.325	.254	-12.496	6.056	4.891	7.149
3	.0075	.020	16.29	90.56	.384	.273	-11.392	7.113	5.253	7.999
4	.0087	.023	16.93	89.79	.397	.306	-11.157	7.348	5.674	9.274
5	.0101	.027	18.72	89.33	.442	.339	-10.334	8.171	6.511	10.761
6	.0116	.031	21.32	88.09	.503	.376	-9.199	9.306	7.266	12.354
7	.0126	.033	21.96	87.61	.516	.399	-8.919	9.585	7.661	13.417
8	.0143	.038	24.19	87.37	.571	.421	-7.945	10.559	8.097	15.222
9	.0165	.043	25.40	86.30	.599	.467	-7.418	11.086	8.969	17.559
10	.0185	.049	26.54	85.46	.626	.491	-6.918	11.587	9.444	19.684
11	.0202	.053	27.28	84.92	.644	.513	-6.595	11.909	9.855	21.490
12	.0215	.057	27.44	84.49	.647	.531	-6.527	11.976	10.200	22.871
13	.0235	.062	28.39	83.86	.670	.557	-6.109	12.395	10.702	24.995
14	.0255	.067	29.51	83.31	.696	.573	-5.620	12.884	11.007	27.120
15	.0275	.072	29.97	83.19	.707	.586	-5.422	13.082	11.263	29.244
16	.0291	.077	30.72	82.97	.725	.595	-5.269	13.236	11.442	30.944
17	.0353	.093	31.24	82.12	.737	.632	-4.865	13.640	12.142	37.530
18	.0427	.112	32.67	81.09	.771	.675	-4.243	14.261	12.978	45.391
19	.0493	.130	33.50	80.20	.790	.713	-3.881	14.623	13.708	52.402
20	.0554	.146	34.16	79.83	.806	.729	-3.585	14.919	14.011	58.862
21	.0625	.165	34.96	79.63	.825	.736	-3.235	15.269	14.152	66.424
22	.0695	.183	35.56	79.01	.837	.763	-2.980	15.525	14.674	73.860
23	.0756	.199	35.72	78.76	.843	.774	-2.913	15.591	14.879	80.340
24	.0827	.218	36.75	78.30	.867	.794	-2.461	16.044	15.253	87.862
25	.0893	.235	36.92	77.66	.871	.820	-2.389	16.115	15.764	94.893
26	.0956	.252	37.25	77.53	.879	.827	-2.242	16.262	15.889	101.565
27	.1025	.270	37.47	77.63	.884	.822	-2.147	16.357	15.806	108.915
28	.1095	.288	38.18	77.26	.901	.838	-1.838	16.667	16.106	116.351
29	.1157	.305	38.17	76.86	.901	.855	-1.840	16.664	16.432	122.937
30	.1229	.323	38.45	76.55	.907	.868	-1.720	16.784	16.684	130.585
31	.1296	.341	38.93	76.26	.918	.880	-1.554	16.951	16.910	137.703
32	.1465	.386	39.66	75.82	.936	.899	-1.189	17.315	17.282	155.655
33	.1641	.432	40.03	75.79	.944	.901	-1.028	17.477	17.309	174.351
34	.1815	.478	40.20	75.15	.948	.926	-.953	17.551	17.799	192.835
35	.1995	.525	40.98	74.76	.967	.943	-.616	17.888	18.131	211.956
36	.2165	.570	41.02	74.80	.968	.942	-.597	17.907	18.111	230.014
37	.2347	.618	41.23	74.57	.973	.952	-.507	17.998	18.301	249.348
38	.2517	.662	41.54	74.26	.980	.965	-.372	18.132	18.553	267.406
39	.2695	.709	41.76	74.23	.985	.967	-.274	18.230	18.577	286.315
40	.2867	.755	41.76	74.31	.985	.963	-.276	18.228	18.516	304.566
41	.3044	.801	41.93	74.02	.989	.976	-.201	18.303	18.749	327.368
42	.3341	.879	42.11	74.07	.994	.974	-.119	18.385	18.711	354.938
43	.3647	.960	42.14	73.83	.994	.984	-.110	18.394	18.903	387.443
44	.3945	1.038	42.22	73.73	.996	.988	-.073	18.431	18.986	419.099
45	.4245	1.117	42.37	73.74	1.000	.987	-.007	18.497	18.976	450.967
46	.4545	1.196	42.29	73.66	.998	.991	-.041	18.463	19.042	482.835
47	.4845	1.275	42.50	73.66	1.003	.991	.049	18.553	19.044	514.704
48	.5147	1.355	42.36	73.62	.999	.992	-.013	18.492	19.073	546.784
49	.5445	1.433	42.18	73.62	.995	.993	-.089	18.415	19.079	578.440
50	.5743	1.511	42.33	73.59	.999	.994	-.026	18.479	19.103	610.096
51	.6043	1.590	42.23	73.55	.996	.996	-.070	18.435	19.135	641.964
52	1.0847	2.855	42.39	73.45	1.000	1.000	.001	18.505	19.214	1152.280
53	1.5647	4.118	42.13	73.44	.994	1.000	-.112	18.393	19.223	1662.172
54	2.0447	5.381	42.06	73.45	.992	1.000	-.145	18.360	19.214	2172.063
55	2.5241	6.642	42.05	73.44	.992	1.000	-.147	18.357	19.223	2681.317
56	3.0046	7.907	41.98	73.47	.988	.999	-.223	18.281	19.200	3191.740

Table 67.

KLEMweC7 TAPE 464eR- FILES 17-36, RUN 4, PTS.1-2C 11/11/2C

PLN NC. 4. POINT 9. GRID NO. 3

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	46.967	46.967
FREE STREAM TEMPERATURE	=	73.294	
WALL TEMPERATURE	=	95.48C	
WALL HEAT FLUX	=	.C4710	
FREE STREAM DENSITY	=	.C7382	
FREE STREAM KINEMATIC VISCOSITY	=	.CCC1664	
DENSITY OF FLUID AT WALL	=	.C7CE7	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.CCC1768	
WALL/FREE STREAM DENSITY RATIC	=	.96CC4	
LOCATION REYNOLDS NUMBER (REX)	=	573198.16	
INPUT VALUE OF VELOCITY DELTA	=	.46CCC	
INPUT VALUE OF TEMPERATURE DELTA	=	1.C9CCC	
CALCULATED DELTA	=		.39497
DELTA 99.5% INPUT	=	.43CCC	
DISPLACEMENT THICKNESS (DELSTAR)	=	.C4705	.C4764
MOMENTUM THICKNESS (THETA)	=	.C3166	.C3161
ENERGY-DISSIPATION THICKNESS	=	.C5713	.C5732
ENTHALPY THICKNESS	=	.CC235	.CC235
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.48623	1.47862
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.8C45C	1.8C172
MOMENTUM THICKNESS REYNOLDS NUMBER	=	743.69	747.3C
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1105.29	1104.9P
SKIN FRICTION COEFFICIENT	=	.CC5146	
FRICTION VELOCITY	=	2.42840	
LAW OF THE WALL CONSTANT (K)	=	.41CCC	
LAW OF THE WALL CONSTANT (C)	=	5.CCCCC	
WAKE STRENGTH	=		-.11643
CLAUSERS 'DELTA' INTEGRAL	=	-.78310	-.86641
CLAUSERS 'G' INTEGRAL	=	4.79239	4.72664
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.C4271	.C4465
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.C3263	.C3219
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.33346	1.39300

LOCATION -X- 24.4CCCC

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 68.

KLEMWEC7 TAPE 4646R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 9. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UF	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0043	.010	11.71	91.51	.241	.179	-14.658	4.656	3.481	4.900
2	.0054	.013	13.63	90.66	.291	.216	-13.703	5.613	4.212	6.144
3	.0063	.015	15.43	89.96	.329	.249	-12.962	6.354	4.637	7.163
4	.0073	.017	17.61	89.22	.360	.282	-11.981	7.335	5.485	8.294
5	.0087	.020	20.04	88.34	.427	.322	-11.063	8.253	6.263	9.878
6	.0101	.024	22.53	87.62	.480	.354	-10.038	9.278	6.691	11.462
7	.0115	.028	24.64	86.90	.525	.387	-9.169	10.147	7.520	13.366
8	.0126	.029	25.24	86.56	.576	.402	-8.921	10.395	7.623	14.291
9	.0147	.034	27.06	85.56	.577	.447	-8.174	11.142	8.702	16.667
10	.0169	.039	28.47	84.90	.607	.477	-7.593	11.723	9.278	19.157
11	.0186	.043	29.39	84.24	.627	.506	-7.213	12.103	9.654	20.967
12	.0202	.047	30.15	84.03	.643	.516	-6.900	12.416	10.043	22.891
13	.0215	.050	30.90	83.81	.659	.526	-6.591	12.725	10.275	24.362
14	.0234	.054	31.37	83.40	.669	.545	-6.400	12.916	10.596	26.512
15	.0258	.060	32.08	82.99	.684	.563	-6.107	13.209	10.951	29.001
16	.0280	.065	32.95	82.66	.702	.576	-5.746	13.568	11.241	31.717
17	.0291	.066	33.04	82.53	.704	.584	-5.711	13.605	11.356	32.961
18	.0355	.083	34.65	81.78	.739	.618	-5.046	14.270	12.014	40.203
19	.0424	.099	35.06	81.06	.746	.649	-4.869	14.447	12.624	48.011
20	.0493	.115	36.30	80.75	.773	.664	-4.383	14.933	12.915	55.818
21	.0557	.130	36.67	80.31	.782	.684	-4.215	15.101	13.301	63.060
22	.0626	.146	37.47	79.85	.799	.704	-3.687	15.428	13.703	70.867
23	.0695	.162	38.14	79.44	.813	.723	-3.611	15.705	14.069	78.768
24	.0759	.177	38.63	79.39	.824	.725	-3.408	15.906	14.112	85.917
25	.0825	.192	38.80	79.21	.827	.733	-3.337	15.979	14.266	93.385
26	.0895	.208	39.41	78.47	.840	.766	-3.089	16.227	14.912	101.306
27	.0954	.222	39.76	78.36	.846	.772	-2.942	16.374	15.014	107.962
28	.1029	.239	40.10	78.44	.855	.768	-2.804	16.512	14.941	116.468
29	.1093	.254	40.74	78.05	.869	.785	-2.538	16.778	15.281	123.710
30	.1157	.269	40.62	77.72	.866	.800	-2.587	16.729	15.571	130.952
31	.1227	.285	41.26	77.76	.882	.798	-2.277	17.039	15.524	138.872
32	.1295	.301	41.57	77.86	.886	.794	-2.198	17.117	15.453	146.567
33	.1463	.340	42.25	77.12	.901	.827	-1.920	17.396	16.098	165.576
34	.1642	.382	42.81	76.36	.913	.862	-1.686	17.626	16.769	185.831
35	.1813	.422	43.70	76.11	.932	.873	-1.321	17.995	16.986	205.180
36	.1994	.464	44.08	76.03	.940	.877	-1.164	18.152	17.057	225.660
37	.2163	.503	44.50	75.56	.949	.897	-.993	18.323	17.450	244.763
38	.2343	.545	45.04	75.37	.950	.906	-.768	18.548	17.632	265.151
39	.2517	.585	45.13	74.98	.962	.924	-.731	18.585	17.978	284.839
40	.2693	.626	45.50	74.61	.970	.932	-.581	18.735	18.128	304.754
41	.2864	.666	45.74	74.46	.975	.947	-.481	18.835	18.417	324.103
42	.3043	.708	45.60	74.48	.972	.946	-.537	18.779	18.415	344.357
43	.3341	.777	46.22	74.40	.985	.950	-.284	19.032	18.485	378.077
44	.3645	.848	46.30	74.10	.987	.964	-.251	19.065	18.750	412.475
45	.3943	.917	46.20	73.97	.985	.969	-.293	19.023	18.661	446.195
46	.4245	.987	46.51	73.83	.992	.976	-.163	19.153	18.986	480.367
47	.4545	1.057	46.77	73.67	.999	.983	-.016	19.209	19.124	514.313
48	.4847	1.127	46.80	73.70	.998	.982	-.045	19.271	19.099	548.465
49	.5147	1.197	46.88	73.55	.999	.986	-.012	19.304	19.228	582.431
50	.5445	1.266	47.04	73.52	1.003	.990	.057	19.373	19.253	616.150
51	.5755	1.337	47.02	73.57	1.002	.988	.048	19.364	19.216	650.662
52	.6055	1.407	46.95	73.46	1.001	.992	.018	19.333	19.291	684.607
53	1.0845	2.522	46.94	73.29	1.001	1.000	.014	19.330	19.459	1227.174
54	1.5644	3.638	47.00	73.34	1.002	.996	.036	19.354	19.420	1770.194
55	2.0450	4.756	46.72	73.29	.996	1.000	-.077	19.239	19.459	2314.005
56	2.5242	5.870	46.71	73.26	.996	1.002	-.080	19.236	19.489	2856.233
57	3.0043	6.986	46.73	73.27	.996	1.001	-.075	19.241	19.479	3400.044

Table 68.

KLDNBELT TAPE 4646R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 6. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	55.214	55.214
FREE STREAM TEMPERATURE =	74.953	
WALL TEMPERATURE =	99.160	
WALL HEAT FLUX =	.04732	
FREE STREAM DENSITY =	.07438	
FREE STREAM KINEMATIC VISCOSITY =	.0001655	
DENSITY OF FLUID AT WALL =	.07167	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001768	
WALL/FREE STREAM DENSITY RATIO =	.96358	
LOCATION REYNOLDS NUMBER (REX) =	900555.99	
INPUT VALUE OF VELOCITY DELTA =	.41000	
INPUT VALUE OF TEMPERATURE DELTA =	.81000	
CALCULATED DELTA =		.40071
DELTA @9.5% INPUT =	.42000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04699	.04716
MOMENTUM THICKNESS (THETA) =	.03206	.03219
ENERGY-DISSIPATION THICKNESS =	.05792	.05804
ENTHALPY THICKNESS =	.00256	.00256
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.46583	1.46517
SHAPE FACTOR 22 (ENERGY/THETA) =	1.80692	1.80269
MOMENTUM THICKNESS REYNOLDS NUMBER =	890.98	894.72
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1306.02	1310.92
SKIN FRICTION COEFFICIENT =	.0049C4	
FRICTION VELOCITY =	2.76528	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.09463
CLAUSERS 'DELTA' INTEGRAL =	-.79938	-.86873
CLAUSERS 'G' INTEGRAL =	4.80255	4.81762
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.04249	.04463
MOMENTUM THICKNESS - CONSTANT DENSITY =	.03243	.03297
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.31065	1.37657

LOCATION -X- 32.40500

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 69.

KLDM-307 TAPE 4045F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 6. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE/UTAU	U(+)	T(+)	Y(+)
1	.0043	.010	16.29	91.70	.295	.171	-13.976	5.847	3.508	5.686
2	.0053	.013	18.76	90.65	.327	.211	-13.333	6.491	4.329	6.999
3	.0067	.016	21.69	89.82	.393	.263	-12.036	7.787	5.376	8.837
4	.0074	.018	23.07	89.46	.416	.282	-11.539	8.285	5.778	9.757
5	.0091	.022	26.67	88.45	.493	.332	-10.248	9.575	6.796	11.989
6	.0107	.026	28.90	87.92	.523	.358	-9.448	10.375	7.334	14.090
7	.0113	.027	30.02	87.79	.544	.365	-9.044	10.780	7.469	14.878
8	.0137	.033	32.42	86.86	.587	.411	-8.182	11.641	8.409	18.029
9	.0154	.037	33.70	86.33	.610	.437	-7.726	12.098	8.946	20.262
10	.0173	.041	35.29	85.82	.639	.462	-7.155	12.669	9.460	22.757
11	.0192	.046	35.95	85.56	.651	.475	-6.915	12.909	9.728	25.252
12	.0205	.049	36.86	85.21	.668	.492	-6.581	13.242	10.061	26.959
13	.0228	.054	37.48	84.95	.679	.523	-6.369	13.455	10.703	29.979
14	.0247	.059	38.15	84.70	.691	.537	-6.127	13.696	11.001	32.474
15	.0267	.064	38.74	84.42	.702	.531	-5.913	13.910	10.676	35.100
16	.0282	.067	39.15	84.34	.709	.535	-5.769	14.054	10.958	37.072
17	.0345	.082	40.70	83.52	.737	.576	-5.213	14.611	11.795	45.343
18	.0417	.099	41.56	82.78	.753	.613	-4.895	14.929	12.543	54.798
19	.0488	.116	42.46	82.27	.769	.636	-4.578	15.246	13.054	63.858
20	.0547	.130	43.04	82.04	.780	.649	-4.370	15.453	13.289	71.868
21	.0615	.146	43.92	81.83	.796	.660	-4.054	15.770	13.504	80.798
22	.0685	.163	44.52	81.56	.806	.672	-3.838	15.985	13.760	89.993
23	.0745	.177	44.91	81.25	.813	.689	-3.699	16.125	14.095	97.869
24	.0815	.194	45.49	81.10	.824	.696	-3.492	16.331	14.246	107.061
25	.0886	.211	46.23	81.01	.839	.700	-3.191	16.633	14.335	116.364
26	.0943	.225	46.69	80.64	.846	.709	-3.059	16.764	14.508	123.869
27	.1014	.241	47.01	80.56	.851	.721	-2.945	16.879	14.766	133.192
28	.1085	.258	47.42	80.24	.859	.738	-2.797	17.027	15.116	142.516
29	.1147	.273	47.83	80.22	.867	.739	-2.645	17.179	15.120	150.657
30	.1214	.289	48.23	79.84	.873	.756	-2.508	17.315	15.520	159.455
31	.1286	.306	48.58	79.26	.880	.786	-2.382	17.441	16.084	168.910
32	.1454	.346	49.50	79.15	.896	.790	-2.031	17.793	16.174	190.971
33	.1632	.389	50.42	78.70	.913	.815	-1.720	18.103	16.674	214.345
34	.1805	.430	50.81	78.51	.920	.824	-1.581	18.242	16.663	237.062
35	.1985	.473	51.60	78.27	.935	.846	-1.297	18.526	17.310	260.699
36	.2155	.513	52.14	77.60	.944	.869	-1.105	18.718	17.783	283.022
37	.2335	.556	52.57	77.29	.952	.884	-.948	18.875	18.104	306.659
38	.2507	.597	52.91	77.00	.956	.899	-.826	18.997	18.395	329.245
39	.2683	.639	53.23	76.94	.964	.902	-.712	19.111	18.461	352.357
40	.2856	.680	53.50	76.38	.969	.930	-.614	19.210	19.027	375.074
41	.3034	.722	53.80	76.01	.974	.918	-.509	19.315	18.788	398.448
42	.3532	.841	54.42	76.05	.986	.944	-.285	19.539	19.317	463.843
43	.4036	.961	54.82	75.75	.993	.961	-.141	19.683	19.665	530.025
44	.4533	1.079	55.18	75.66	.999	.965	-.011	19.812	19.757	595.269
45	.5035	1.199	55.35	75.32	1.001	.982	.026	19.849	20.094	661.209
46	.5535	1.318	55.17	75.25	.999	.985	-.015	19.809	20.169	726.866
47	.6033	1.436	55.40	75.19	1.003	.988	.068	19.891	20.228	792.261
48	.6535	1.556	55.40	75.16	1.003	.990	.066	19.890	20.255	858.180
49	.7037	1.676	55.30	75.05	1.001	.995	.070	19.853	20.374	924.100
50	.7533	1.794	55.39	75.05	1.003	.995	.063	19.866	20.367	989.232
51	.8037	1.914	55.63	75.02	1.007	.996	.148	19.971	20.396	1055.415
52	1.2431	2.960	55.34	74.96	1.002	1.000	.047	19.870	20.460	1632.411
53	1.6935	4.028	55.79	74.95	1.003	1.000	.067	19.886	20.476	2210.721
54	2.1235	5.056	55.76	74.95	1.003	1.000	.059	19.882	20.470	2788.505
55	2.5631	6.103	55.05	74.92	.997	1.001	-.059	19.764	20.497	3365.764
56	3.0037	7.152	55.72	74.93	1.002	1.001	.037	19.860	20.492	3944.337

Table 69.

MLDM.BC7 TAPE 4648- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 7. GRID NO. 3

BOUNDARY LAYER PROPERTIES	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	55.052	55.052
FREE STREAM TEMPERATURE =	74.978	
WALL TEMPERATURE =	94.750	
WALL HEAT FLUX =	.04730	
FREE STREAM DENSITY =	.07438	
FREE STREAM KINEMATIC VISCOSITY =	.0001656	
DENSITY OF FLUID AT WALL =	.07173	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001765	
WALL/FREE STREAM DENSITY RATIO =	.96434	
LOCATION REYNOLDS NUMBER (REX) =	897644.43	
INPUT VALUE OF VELOCITY DELTA =	.41000	
INPUT VALUE OF TEMPERATURE DELTA =	.76000	
CALCULATED DELTA =		.39498
DELTA 99.5% INPUT =	.45000	
DISPLACEMENT THICKNESS (DELSTAR) =	.04706	.04720
MOMENTUM THICKNESS (THETA) =	.03190	.03212
ENERGY-DISSIPATION THICKNESS =	.05763	.05763
ENTHALPY THICKNESS =	.00253	.00253
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.47508	1.46954
SHAPE FACTOR 32 (ENERGY/THETA) =	1.80650	1.80046
MOMENTUM THICKNESS REYNOLDS NUMBER =	884.10	890.11
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1304.11	1308.05
SKIN FRICTION COEFFICIENT =	.004892	
FRICTION VELOCITY =	2.77268	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.07869
CLAUSERS "DELTA" INTEGRAL =	-.78252	-.89117
CLAUSERS "G" INTEGRAL =	4.91274	4.88048
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.04308	.04468
MOMENTUM THICKNESS - CONSTANT DENSITY =	.03228	.03250
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.33349	1.38085

LOCATION -X- 32.40000

Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 70.

KLCMWEC7 TAPE 4646F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 7. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0053	.012	17.95	90.79	.326	.200	-13.381	6.474	3.995	6.976
2	.0066	.015	21.49	89.56	.390	.263	-12.103	7.752	5.242	8.940
3	.0075	.017	23.09	89.10	.419	.286	-11.526	8.327	5.697	9.856
4	.0083	.019	24.96	88.71	.453	.305	-10.853	9.002	6.092	10.903
5	.0095	.021	27.11	88.21	.492	.330	-10.076	9.777	6.582	12.474
6	.0111	.025	29.83	87.59	.542	.362	-9.095	10.760	7.229	14.568
7	.0127	.029	31.60	87.04	.574	.390	-8.456	11.397	7.785	16.662
8	.0134	.030	32.52	86.90	.591	.397	-8.126	11.730	7.922	17.579
9	.0157	.035	33.91	86.35	.616	.430	-7.627	12.229	8.574	20.589
10	.0176	.040	35.38	85.53	.643	.466	-7.096	12.759	9.306	23.338
11	.0195	.043	35.98	85.15	.654	.486	-6.878	12.978	9.691	25.563
12	.0212	.047	36.77	85.20	.668	.493	-6.594	13.261	9.637	27.768
13	.0227	.051	37.27	84.81	.677	.503	-6.414	13.441	10.031	29.752
14	.0245	.055	38.09	84.53	.692	.517	-6.118	13.776	10.316	32.108
15	.0269	.060	38.64	84.25	.702	.531	-5.918	13.978	10.592	35.249
16	.0289	.064	39.13	84.03	.711	.542	-5.743	14.112	10.614	37.736
17	.0302	.067	39.16	83.88	.711	.550	-5.733	14.123	10.972	39.568
18	.0363	.081	40.51	83.31	.736	.579	-5.245	14.610	11.544	47.553
19	.0435	.097	41.85	82.78	.760	.605	-4.761	15.095	12.076	56.977
20	.0507	.113	42.41	82.61	.770	.614	-4.558	15.297	12.248	66.401
21	.0567	.126	43.26	82.17	.786	.636	-4.254	15.602	12.694	74.255
22	.0637	.142	43.82	81.61	.796	.665	-4.053	15.802	13.260	83.417
23	.0705	.157	44.24	81.54	.804	.668	-3.901	15.955	13.329	92.318
24	.0765	.170	45.08	81.50	.819	.670	-3.597	16.258	13.367	100.171
25	.0835	.186	45.35	80.86	.824	.703	-3.500	16.356	14.020	109.333
26	.0906	.201	45.89	80.79	.834	.706	-3.303	16.552	14.085	118.627
27	.0963	.214	46.33	80.60	.842	.716	-3.145	16.710	14.279	126.087
28	.1037	.231	46.83	80.32	.851	.730	-2.965	16.890	14.561	135.773
29	.1108	.246	47.60	80.11	.865	.741	-2.687	17.168	14.775	145.067
30	.1165	.259	47.95	79.93	.871	.750	-2.562	17.293	14.958	152.527
31	.1237	.275	48.03	79.71	.872	.761	-2.533	17.323	15.174	161.952
32	.1307	.291	48.65	79.57	.884	.768	-2.309	17.546	15.320	171.114
33	.1478	.329	49.30	79.36	.895	.779	-2.076	17.779	15.535	193.496
34	.1651	.367	50.31	78.94	.914	.799	-1.712	18.144	15.951	216.141
35	.1825	.406	50.94	78.37	.925	.828	-1.483	18.372	16.530	238.916
36	.2009	.447	51.34	78.02	.933	.846	-1.339	18.516	16.674	263.000
37	.2174	.483	52.05	77.88	.946	.868	-1.082	18.774	17.325	284.597
38	.2359	.524	52.50	77.32	.954	.882	-.922	18.934	17.588	308.811
39	.2527	.562	52.92	77.10	.961	.893	-.771	19.085	17.808	330.801
40	.2703	.601	53.18	76.86	.966	.920	-.673	19.182	18.358	353.838
41	.2876	.640	53.55	76.41	.973	.927	-.541	19.315	18.487	376.744
42	.3057	.679	53.85	76.52	.978	.922	-.433	19.422	18.399	400.173
43	.3551	.789	54.39	76.07	.988	.945	-.239	19.617	18.651	464.834
44	.4053	.901	54.56	75.74	.991	.961	-.178	19.678	19.180	530.541
45	.4553	1.012	54.85	75.55	.996	.969	-.073	19.793	19.332	595.967
46	.5057	1.124	55.17	75.42	1.002	.977	.044	19.899	19.502	661.956
47	.5555	1.235	55.13	75.35	1.001	.981	.029	19.884	19.576	727.139
48	.6053	1.345	54.92	75.21	.999	.988	-.011	19.844	19.718	792.323
49	.6556	1.457	55.20	75.07	1.003	.996	.052	19.908	19.662	858.161
50	.7056	1.566	55.13	75.09	1.001	.994	.029	19.885	19.642	923.607
51	.7553	1.679	55.22	75.06	1.003	.996	.062	19.917	19.666	968.660
52	.8057	1.791	55.06	74.96	1.000	1.001	.003	19.858	19.972	1054.629
53	1.2451	2.767	55.12	74.95	1.001	.999	.023	19.878	19.946	1629.783
54	1.6853	3.745	54.86	74.95	.996	.999	-.075	19.785	19.942	2205.947
55	2.1253	4.723	54.91	74.95	.997	.999	-.050	19.805	19.936	2781.868
56	2.5652	5.701	54.72	74.95	.994	.999	-.121	19.734	19.942	3357.658
57	3.0053	6.679	54.70	74.95	.994	.999	-.127	19.728	19.942	3933.710

Table 70.

KLEMP67 TAPE 4648P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 8. GRID NO. 3

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	54.635	54.635
FREE STREAM TEMPERATURE	=	75.000	
WALL TEMPERATURE	=	94.330	
WALL HEAT FLUX	=	.04745	
FREE STREAM DENSITY	=	.07438	
FREE STREAM KINEMATIC VISCOSITY	=	.0001656	
DENSITY OF FLUID AT WALL	=	.07178	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001763	
WALL/FREE STREAM DENSITY RATIO	=	.96511	
LOCATION REYNOLDS NUMBER (REX)	=	890976.28	
INPUT VALUE OF VELOCITY DELTA	=	.41000	
INPUT VALUE OF TEMPERATURE DELTA	=	.70000	
CALCULATED DELTA	=		.37762
DELTA 99.5% INPUT	=	.40500	
DISPLACEMENT THICKNESS (DELSTAR)	=	.04642	.04662
MOMENTUM THICKNESS (THETA)	=	.03090	.03116
ENERGY-DISSIPATION THICKNESS	=	.05564	.05601
ENTHALPY THICKNESS	=	.00240	.00241
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.50238	1.47769
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.80092	1.79777
MOMENTUM THICKNESS REYNOLDS NUMBER	=	649.65	656.75
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1276.50	1265.49
SKIN FRICTION COEFFICIENT	=	.004921	
FRICTION VELOCITY	=	2.75876	
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		-.06500
CLAUSERS 'DELTA' INTEGRAL	=	-.76938	-.86676
CLAUSERS 'C' INTEGRAL	=	5.06961	4.80215
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.04151	.04377
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.03126	.03152
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.32820	1.38842

LOCATION -X- 32.400000

Z = -6 INCHES

K = 0.75 X 10^{-6}

Table 71.

KLDM6827 TAPE 4648P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 8. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0053	.013	15.59	89.50	.285	.250	-14.152	5.652	4.639	6.951
2	.0068	.017	18.70	88.40	.335	.307	-13.170	6.634	5.947	8.907
3	.0081	.020	22.72	87.98	.429	.329	-11.712	8.092	6.371	10.602
4	.0098	.024	25.59	87.22	.466	.368	-10.529	9.275	7.132	12.819
5	.0104	.026	26.42	87.11	.484	.374	-10.226	9.578	7.243	13.602
6	.0129	.032	30.01	86.39	.549	.411	-8.926	10.878	7.957	16.731
7	.0144	.036	32.17	86.02	.589	.430	-8.144	11.660	8.333	18.818
8	.0165	.041	33.43	85.47	.612	.458	-7.686	12.118	8.681	21.556
9	.0161	.045	34.54	85.25	.632	.470	-7.284	12.521	9.100	23.643
10	.0198	.049	35.63	85.04	.652	.481	-6.887	12.917	9.317	25.860
11	.0213	.053	36.39	84.66	.666	.500	-6.612	13.192	9.693	27.816
12	.0237	.059	37.06	84.53	.678	.507	-6.372	13.432	9.828	30.946
13	.0259	.064	37.72	84.20	.690	.524	-6.131	13.674	10.154	33.815
14	.0271	.067	38.16	83.97	.698	.536	-5.972	13.832	10.387	35.380
15	.0339	.084	39.56	83.11	.724	.581	-5.458	14.347	11.253	44.247
16	.0406	.100	40.87	82.98	.746	.587	-4.989	14.815	11.382	52.985
17	.0476	.118	41.95	82.38	.766	.618	-4.598	15.206	11.986	62.113
18	.0536	.132	42.64	82.16	.780	.630	-4.349	15.455	12.205	69.936
19	.0606	.149	43.02	81.94	.787	.641	-4.212	15.592	12.428	78.936
20	.0676	.167	43.99	81.62	.805	.647	-3.859	15.945	12.543	88.195
21	.0733	.181	44.47	81.45	.814	.666	-3.686	16.119	12.917	95.628
22	.0803	.198	45.26	81.22	.828	.676	-3.398	16.406	13.146	104.757
23	.0875	.216	45.56	80.64	.834	.698	-3.281	16.523	13.527	114.146
24	.0937	.231	46.15	80.57	.845	.712	-3.077	16.727	13.793	122.232
25	.1003	.248	46.75	80.02	.856	.709	-2.859	16.945	13.749	130.839
26	.1076	.266	47.10	80.45	.862	.716	-2.730	17.074	13.916	140.358
27	.1135	.281	47.48	80.07	.869	.738	-2.593	17.211	14.294	148.163
28	.1205	.295	47.64	79.82	.872	.750	-2.534	17.270	14.546	157.181
29	.1278	.316	48.10	79.67	.880	.758	-2.368	17.436	14.696	166.701
30	.1449	.358	49.10	79.01	.899	.793	-2.006	17.798	15.361	189.001
31	.1622	.401	49.78	78.71	.911	.826	-1.761	18.043	15.659	211.561
32	.1793	.443	50.61	78.23	.926	.833	-1.459	18.346	16.138	233.861
33	.1973	.487	51.28	77.83	.939	.853	-1.217	18.587	16.542	257.334
34	.2143	.529	51.61	77.57	.945	.867	-1.098	18.707	16.808	279.504
35	.2323	.574	52.09	77.42	.953	.875	-.922	18.882	16.951	302.977
36	.2494	.616	52.51	77.38	.961	.877	-.771	19.034	16.992	325.277
37	.2675	.661	52.98	76.87	.970	.903	-.599	19.205	17.502	348.881
38	.2847	.703	53.22	76.77	.974	.909	-.512	19.292	17.610	371.311
39	.3023	.746	53.37	76.31	.977	.932	-.457	19.347	18.070	394.263
40	.3522	.870	54.28	76.02	.994	.947	-.126	19.676	18.360	459.337
41	.4027	.994	54.37	75.58	.995	.971	-.095	19.709	18.625	525.193
42	.4523	1.117	54.59	75.44	.999	.977	-.015	19.789	18.944	569.875
43	.5023	1.240	54.67	75.33	1.001	.983	.012	19.816	19.053	655.079
44	.5529	1.365	54.64	75.31	1.000	.984	.003	19.808	19.076	721.066
45	.6025	1.488	54.89	75.24	1.005	.987	.094	19.898	19.137	785.748
46	.6525	1.612	54.90	75.16	1.005	.992	.097	19.901	19.223	851.344
47	.7025	1.735	54.96	75.00	1.006	1.000	.119	19.923	19.379	916.157
48	.7523	1.858	55.28	75.00	1.012	1.000	.234	20.038	19.383	961.100
49	.8025	1.982	54.93	75.00	1.004	1.000	.072	19.877	19.383	1046.956
50	1.2421	3.067	54.90	74.97	1.005	1.002	.095	19.899	19.415	1619.839
51	1.6523	4.154	54.82	74.97	1.003	1.001	.067	19.871	19.409	2193.896
52	2.1025	5.242	54.88	75.00	1.004	1.000	.089	19.893	19.383	2768.344
53	2.5622	6.326	54.92	74.95	1.005	1.000	.102	19.976	19.386	3341.358
54	3.0023	7.413	54.59	75.00	.999	1.000	-.015	19.790	19.383	3915.284

Table 71.

KLDMWFL7 TAPE 4646P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 5. GRID NO. 3

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANLARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	66.696	66.696
FREE STREAM TEMPERATURE	=	75.156	
WALL TEMPERATURE	=	94.330	
WALL HEAT FLUX	=	.04600	
FREE STREAM DENSITY	=	.07436	
FREE STREAM KINEMATIC VISCOSITY	=	.0001657	
DENSITY OF FLUID AT WALL	=	.07182	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001761	
WALL/FREE STREAM DENSITY RATIO	=	.96591	
LOCATION REYNOLDS NUMBER (REX)	=	1355522.06	
INPUT VALUE OF VELOCITY DELTA	=	.46000	
INPUT VALUE OF TEMPERATURE DELTA	=	.81000	
CALCULATED DELTA	=		.40279
DELTA 99.5% INPUT	=	.41500	
DISPLACEMENT THICKNESS (DELSTAR)	=	.04284	.04319
MOMENTUM THICKNESS (THETA)	=	.02945	.02971
ENERGY-DISSIPATION THICKNESS	=	.05368	.05367
ENTHALPY THICKNESS	=	.00277	.00277
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.45435	1.45373
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.82258	1.81311
MOMENTUM THICKNESS REYNOLDS NUMBER	=	988.23	996.66
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1437.23	1449.16
SKIN FRICTION COEFFICIENT	=	.004856	
FRICTION VELOCITY	=	3.34404	
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		-.16496
CLAUSERS 'DELTA' INTEGRAL	=	-.69681	-.81069
CLAUSERS 'G' INTEGRAL	=	4.16160	4.19869
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.03762	.04007
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.02981	.03007
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.26159	1.35162

LOCATION -X- 40.40000

Z = CENTERLINE

K = 0.75 x 10^{-6}

Table 72.

KLEPWEC7 TAPE 4648R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 5. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0053	.013	26.96	89.55	.404	.235	-11.681	8.063	5.335	8.433
2	.0068	.016	30.58	88.80	.456	.277	-10.600	9.145	6.279	10.807
3	.0075	.018	33.00	88.47	.495	.294	-10.077	9.868	6.674	11.914
4	.0088	.021	35.71	87.81	.536	.330	-9.205	10.740	7.473	13.971
5	.0094	.023	37.42	87.48	.561	.347	-8.754	11.190	7.668	14.921
6	.0112	.027	39.99	86.81	.596	.383	-8.016	11.929	8.675	17.769
7	.0128	.031	41.38	86.32	.620	.409	-7.572	12.373	9.260	20.300
8	.0134	.032	42.23	86.10	.633	.416	-7.317	12.627	9.426	21.250
9	.0159	.038	43.85	85.65	.657	.442	-6.832	13.113	10.013	25.047
10	.0175	.042	45.06	85.28	.676	.463	-6.469	13.475	10.504	27.737
11	.0198	.048	46.18	84.90	.692	.484	-6.135	13.810	10.929	31.376
12	.0212	.051	46.77	84.77	.701	.491	-5.958	13.987	11.117	33.591
13	.0228	.055	47.26	84.64	.709	.498	-5.806	14.139	11.280	36.123
14	.0248	.060	47.97	84.44	.719	.506	-5.601	14.344	11.512	39.267
15	.0263	.063	48.06	84.35	.721	.513	-5.568	14.376	11.626	41.661
16	.0288	.069	48.88	84.15	.733	.521	-5.329	14.616	11.617	45.300
17	.0301	.073	49.44	84.08	.741	.527	-5.162	14.783	11.943	47.673
18	.0364	.088	50.61	83.72	.759	.546	-4.811	15.134	12.376	57.642
19	.0435	.105	51.54	83.04	.773	.583	-4.532	15.413	13.203	68.876
20	.0508	.122	52.79	82.35	.791	.619	-4.159	15.786	14.025	80.426
21	.0569	.137	53.49	82.23	.802	.625	-3.948	15.996	14.164	89.920
22	.0636	.153	54.42	82.21	.816	.626	-3.671	16.273	14.190	100.679
23	.0703	.169	55.06	81.93	.826	.641	-3.479	16.466	14.528	111.260
24	.0763	.184	55.62	81.70	.834	.653	-3.313	16.632	14.604	120.774
25	.0840	.202	56.61	81.36	.849	.671	-3.017	16.928	15.216	132.957
26	.0903	.218	56.94	81.20	.854	.680	-2.918	17.027	15.405	142.925
27	.0965	.233	57.68	80.85	.865	.696	-2.696	17.249	15.775	152.735
28	.1036	.250	58.14	80.75	.872	.701	-2.558	17.387	15.696	163.969
29	.1105	.266	58.44	80.59	.876	.712	-2.470	17.475	16.144	174.887
30	.1164	.281	58.86	80.44	.882	.720	-2.345	17.600	16.324	184.222
31	.1238	.298	59.23	80.22	.886	.732	-2.231	17.714	16.586	195.931
32	.1304	.314	59.97	79.94	.899	.746	-2.010	17.934	16.914	206.374
33	.1480	.357	60.85	79.53	.912	.768	-1.748	18.197	17.408	234.222
34	.1652	.398	61.42	79.23	.921	.784	-1.577	18.368	17.778	261.437
35	.1824	.440	62.38	78.60	.935	.817	-1.292	18.653	18.525	288.651
36	.2004	.483	63.09	78.32	.946	.832	-1.079	18.865	18.867	317.132
37	.2178	.525	63.57	78.22	.953	.838	-.934	19.010	19.024	344.667
38	.2354	.567	64.19	77.72	.962	.864	-.751	19.194	19.584	372.511
39	.2526	.609	64.37	77.45	.965	.878	-.696	19.248	19.906	399.726
40	.2703	.651	64.80	77.35	.972	.884	-.568	19.377	20.030	427.732
41	.2878	.694	65.14	77.15	.977	.894	-.464	19.480	20.270	455.421
42	.3058	.737	65.30	76.77	.979	.915	-.419	19.526	20.730	483.902
43	.3552	.856	65.87	76.51	.988	.926	-.248	19.697	21.039	562.066
44	.4056	.977	66.33	75.97	.995	.957	-.109	19.836	21.690	641.811
45	.4560	1.099	66.44	75.95	.996	.958	-.076	19.869	21.706	721.557
46	.5060	1.219	66.67	75.57	1.000	.973	-.007	19.938	22.165	800.512
47	.5554	1.338	66.72	75.57	1.000	.976	.006	19.951	22.172	878.834
48	.6055	1.459	66.70	75.57	1.000	.976	.000	19.945	22.168	959.263
49	.6557	1.580	66.72	75.38	1.000	.986	.008	19.953	22.399	1037.534
50	.7059	1.701	66.77	75.34	1.001	.990	.023	19.966	22.447	1116.963
51	.7555	1.821	66.70	75.25	1.000	.995	.000	19.945	22.548	1195.602
52	.8053	1.942	66.81	75.24	1.002	.996	.033	19.976	22.565	1275.031
53	1.2452	3.001	66.80	75.17	1.002	.999	.032	19.977	22.650	1970.275
54	1.6855	4.062	66.86	75.15	1.003	1.000	.056	20.001	22.676	2667.418
55	2.1256	5.122	66.63	75.15	.999	1.000	-.020	19.925	22.669	3363.295
56	2.5652	6.181	66.71	75.15	1.000	1.000	.003	19.946	22.676	4058.856
57	3.0054	7.242	66.80	75.14	1.002	1.001	.032	19.977	22.683	4755.366

Table 72.

KLDMw807 TAPE 4048P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 2. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	82.716	82.718
FREE STREAM TEMPERATURE =	74.517	
WALL TEMPERATURE =	91.630	
WALL HEAT FLUX =	.04750	
FREE STREAM DENSITY =	.07444	
FREE STREAM KINEMATIC VISCOSITY =	.0001653	
DENSITY OF FLUID AT WALL =	.07213	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001748	
WALL/FREE STREAM DENSITY RATIO =	.96896	
LOCATION REYNOLDS NUMBER (REX) =	2018309.16	
INPUT VALUE OF VELOCITY DELTA =	.46000	
INPUT VALUE OF TEMPERATURE DELTA =	.81000	
CALCULATED DELTA =		.35700
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.03774	.03703
MOMENTUM THICKNESS (THETA) =	.02590	.02620
ENERGY-DISSIPATION THICKNESS =	.04729	.04757
ENTHALPY THICKNESS =	.00255	.00251
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.45679	1.44372
SHAPE FACTOR 22 (ENERGY/THETA) =	1.82543	1.81501
MOMENTUM THICKNESS REYNOLDS NUMBER =	1060.22	1092.04
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1573.64	1577.46
SKIN FRICTION COEFFICIENT =	.004757	
FRICTION VELOCITY =	4.09844	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.16139
CLAUSERS "DELTA" INTEGRAL =	-.61600	-.71625
CLAUSERS "C" INTEGRAL =	3.72502	3.67049
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03294	.03549
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02620	.02648
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.25689	1.34032

LOCATION -X- 48.400000

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 73.

KLDM-827 TAPE 4648P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 2. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE / UTAU	U(+)	T(+)	Y(+)
1	.0043	.014	33.55	87.83	.462	.222	-12.069	8.113	5.677	9.438
2	.0062	.017	39.76	87.27	.476	.255	-10.580	9.603	6.506	12.174
3	.0070	.020	42.70	86.44	.516	.303	-9.763	10.419	7.746	13.736
4	.0075	.022	45.46	86.02	.550	.326	-9.090	11.092	8.379	15.301
5	.0092	.026	48.63	85.47	.586	.360	-8.317	11.866	9.200	18.037
6	.0107	.030	51.41	84.86	.622	.395	-7.638	12.545	10.109	20.968
7	.0123	.035	53.26	84.44	.644	.420	-7.189	12.994	10.737	24.094
8	.0129	.036	54.54	84.38	.653	.426	-6.996	13.186	10.680	25.267
9	.0153	.043	56.06	84.21	.676	.434	-6.499	13.684	11.082	29.957
10	.0173	.049	57.48	83.60	.695	.469	-6.158	14.025	11.993	33.865
11	.0193	.054	58.75	83.55	.705	.471	-5.947	14.236	12.047	37.773
12	.0207	.058	59.16	83.22	.715	.486	-5.743	14.440	12.475	40.509
13	.0221	.062	59.60	83.21	.721	.492	-5.641	14.542	12.582	43.245
14	.0241	.068	60.76	83.19	.730	.493	-5.450	14.732	12.800	47.153
15	.0261	.073	61.06	82.90	.736	.510	-5.284	14.896	13.040	50.866
16	.0282	.079	61.51	82.69	.744	.523	-5.175	15.007	13.357	54.774
17	.0296	.083	62.11	82.38	.751	.529	-5.026	15.155	13.515	57.901
18	.0361	.101	63.95	82.17	.772	.553	-4.604	15.578	14.131	70.603
19	.0423	.121	65.01	81.68	.786	.581	-4.321	15.862	14.655	84.672
20	.0503	.141	66.56	81.66	.805	.586	-3.943	16.240	14.975	98.351
21	.0560	.158	67.63	81.53	.816	.590	-3.682	16.500	15.081	109.881
22	.0631	.177	68.61	80.95	.829	.624	-3.443	16.740	15.955	123.364
23	.0703	.197	69.72	80.81	.843	.632	-3.172	17.011	16.160	137.434
24	.0762	.214	70.43	80.77	.851	.635	-2.998	17.185	16.227	148.963
25	.0833	.233	71.73	80.52	.862	.649	-2.776	17.405	16.577	162.837
26	.0901	.252	72.04	80.22	.871	.667	-2.604	17.578	17.049	176.126
27	.0963	.270	72.24	80.01	.881	.679	-2.410	17.773	17.353	188.241
28	.1030	.289	73.32	79.76	.886	.692	-2.293	17.890	17.697	201.334
29	.1100	.308	73.89	79.65	.893	.697	-2.153	18.030	17.628	215.013
30	.1163	.326	74.49	79.67	.901	.699	-2.008	18.175	17.666	227.324
31	.1234	.346	75.12	79.50	.906	.709	-1.854	18.329	18.120	241.198
32	.1299	.364	75.51	79.24	.913	.724	-1.759	18.423	18.505	253.900
33	.1472	.412	76.64	78.36	.927	.775	-1.482	18.700	19.621	287.706
34	.1647	.461	77.72	78.04	.940	.794	-1.218	18.964	20.297	321.903
35	.1818	.509	78.56	77.66	.950	.616	-1.015	19.168	20.669	355.319
36	.1998	.560	79.11	77.31	.956	.837	-.880	19.303	21.397	390.493
37	.2165	.607	79.82	77.43	.965	.829	-.708	19.475	21.179	423.714
38	.2349	.658	80.40	76.71	.972	.872	-.566	19.616	22.287	459.083
39	.2518	.705	80.66	76.48	.975	.895	-.496	19.686	22.626	492.108
40	.2702	.757	81.01	76.54	.979	.862	-.417	19.765	22.541	528.064
41	.2872	.805	81.47	76.30	.985	.896	-.304	19.879	22.900	561.264
42	.3053	.855	81.57	75.90	.986	.919	-.281	19.902	23.491	596.654
43	.3547	.994	82.19	75.66	.994	.933	-.129	20.054	23.656	693.188
44	.4049	1.174	82.74	75.36	.995	.951	-.093	20.090	24.302	791.265
45	.4549	1.274	82.49	75.00	.997	.972	-.057	20.126	24.642	888.991
46	.5053	1.415	82.75	75.00	1.000	.972	.007	20.190	24.635	987.479
47	.5550	1.555	82.67	74.84	.995	.981	-.010	20.172	25.082	1064.600
48	.6049	1.694	82.73	74.76	1.000	.995	.003	20.186	25.170	1182.111
49	.6553	1.676	82.76	74.74	1.001	.987	.011	20.193	25.233	1280.599
50	.7053	1.976	82.76	74.64	1.001	.993	.010	20.193	25.378	1378.305
51	.7550	2.115	82.85	74.60	1.002	.995	.023	20.216	25.436	1475.425
52	.8053	2.256	82.85	74.59	1.002	.996	.032	20.215	25.459	1573.716
53	1.1448	3.207	82.72	74.54	1.000	.999	.001	20.183	25.526	2237.144
54	1.4852	4.160	82.71	74.50	1.000	1.001	-.002	20.181	25.583	2902.329
55	1.8346	5.111	82.46	74.51	.997	1.000	-.057	20.126	25.574	3565.560
56	2.1652	6.065	82.49	74.54	.997	.999	-.056	20.127	25.527	4231.136
57	2.5151	7.017	82.39	74.54	.996	.999	-.079	20.104	25.528	4895.344

Table 73.

KLDM.S.7 TAPE 4648F- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 3. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	62.719	62.719
FREE STREAM TEMPERATURE =	74.729	
WALL TEMPERATURE =	91.410	
WALL HEAT FLUX =	.04760	
FREE STREAM DENSITY =	.07441	
FREE STREAM KINEMATIC VISCOSITY =	.0001654	
DENSITY OF FLUID AT WALL =	.07216	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001747	
WALL/FREE STREAM DENSITY RATIO =	.96973	
LOCATION REYNOLDS NUMBER (REX) =	2016931.69	
INPUT VALUE OF VELOCITY DELTA =	.41000	
INPUT VALUE OF TEMPERATURE DELTA =	.81000	
CALCULATED DELTA =		.35814
DELTA 99.5% INPUT =	.40500	
DISPLACEMENT THICKNESS (DELSTAR) =	.03798	.03641
MOMENTUM THICKNESS (THETA) =	.02619	.02641
ENERGY-DISSIPATION THICKNESS =	.04776	.04794
ENTHALPY THICKNESS =	.00262	.00262
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.44982	1.44675
SHAPE FACTOR 32 (ENERGY/THETA) =	1.82347	1.81513
MOMENTUM THICKNESS REYNOLDS NUMBER =	1091.52	1101.72
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1582.51	1592.47
SKIN FRICTION COEFFICIENT =	.004741	
FRICTION VELOCITY =	4.08964	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.15328
CLAUSERS 'DELTA' INTEGRAL =	-.67267	-.72513
CLAUSERS 'C' INTEGRAL =	3.72668	3.73284
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.03744	.03565
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02650	.02673
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.26204	1.34136

LOCATION -X- 48.40000

Z = +6 INCHES

K = 0.75 X 10^{-6}

Table 74.

KLEMW5L7 TAPE 4648R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 3. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0043	.011	31.58	88.33	.385	.185	-12.431	7.796	4.584	8.449
2	.0057	.014	36.75	87.42	.444	.239	-11.241	8.985	5.933	11.181
3	.0066	.016	41.51	86.88	.502	.273	-10.077	10.150	6.774	12.937
4	.0073	.018	44.00	86.46	.532	.296	-9.467	10.760	7.359	14.303
5	.0086	.021	47.75	85.96	.577	.327	-8.551	11.675	8.115	16.840
6	.0102	.025	50.73	85.43	.613	.358	-7.622	12.405	8.695	19.962
7	.0115	.028	52.59	85.00	.636	.384	-7.367	12.859	9.531	22.499
8	.0123	.030	53.65	84.85	.649	.394	-7.108	13.118	9.768	24.060
9	.0143	.035	55.40	84.44	.670	.416	-6.680	13.547	10.377	27.962
10	.0167	.041	57.10	84.08	.690	.439	-6.264	13.962	10.902	32.645
11	.0190	.047	58.32	83.87	.705	.452	-5.966	14.261	11.215	37.133
12	.0201	.050	58.79	83.65	.711	.463	-5.851	14.376	11.489	39.260
13	.0216	.053	59.39	83.55	.716	.471	-5.705	14.521	11.702	42.207
14	.0233	.057	60.12	83.35	.727	.483	-5.526	14.701	11.999	45.524
15	.0257	.064	60.77	83.32	.735	.485	-5.368	14.859	12.033	50.207
16	.0274	.068	61.46	83.27	.743	.488	-5.198	15.029	12.112	53.524
17	.0292	.072	61.81	83.09	.747	.499	-5.113	15.114	12.385	57.037
18	.0357	.088	63.26	82.42	.765	.539	-4.757	15.470	13.374	69.720
19	.0427	.106	64.76	82.14	.783	.556	-4.391	15.836	13.794	83.379
20	.0494	.122	66.19	81.83	.800	.574	-4.042	16.184	14.250	96.453
21	.0555	.137	67.30	81.50	.814	.594	-3.770	16.457	14.751	108.356
22	.0627	.155	68.39	81.25	.827	.609	-3.503	16.724	15.118	122.405
23	.0697	.172	69.58	81.15	.841	.612	-3.213	17.014	15.202	136.065
24	.0755	.186	70.28	80.97	.847	.626	-3.089	17.137	15.532	147.362
25	.0824	.204	70.94	80.71	.856	.642	-2.880	17.347	15.923	160.846
26	.0895	.221	71.95	80.55	.869	.651	-2.657	17.570	16.166	174.700
27	.0955	.236	72.59	80.30	.876	.666	-2.476	17.750	16.536	186.408
28	.1027	.254	73.17	80.09	.885	.679	-2.336	17.891	16.846	200.458
29	.1097	.271	73.81	80.10	.892	.678	-2.178	18.049	16.836	214.117
30	.1156	.286	74.22	79.72	.897	.701	-2.078	18.148	17.399	225.630
31	.1225	.303	74.75	79.30	.904	.726	-1.946	18.279	18.023	239.094
32	.1297	.321	75.30	79.46	.911	.717	-1.800	18.427	17.787	253.143
33	.1469	.363	76.69	78.87	.927	.752	-1.473	18.753	18.664	286.705
34	.1641	.405	77.42	78.46	.936	.776	-1.295	18.931	19.271	320.268
35	.1813	.448	78.39	77.97	.946	.806	-1.059	19.167	19.995	353.830
36	.1997	.493	79.14	77.66	.957	.823	-.876	19.351	20.433	389.734
37	.2163	.534	79.73	77.59	.964	.828	-.732	19.495	20.562	422.126
38	.2343	.579	80.33	77.30	.971	.846	-.585	19.641	20.996	457.250
39	.2515	.621	80.69	77.11	.975	.857	-.496	19.731	21.279	490.812
40	.2697	.666	81.06	76.68	.980	.883	-.405	19.822	21.917	526.326
41	.2865	.707	81.26	76.33	.983	.904	-.353	19.874	22.436	559.108
42	.3045	.752	81.56	76.07	.986	.920	-.262	19.944	22.630	594.231
43	.3542	.875	81.94	76.00	.991	.924	-.150	20.077	22.934	691.211
44	.4046	.999	82.21	75.57	.995	.950	-.099	20.127	23.575	789.557
45	.4547	1.123	82.62	75.36	.999	.962	-.024	20.203	23.882	887.317
46	.5043	1.245	82.74	75.12	1.000	.977	.005	20.232	24.246	984.102
47	.5543	1.369	82.80	75.10	1.001	.977	.019	20.245	24.262	1081.668
48	.6043	1.492	82.74	74.96	1.000	.986	.006	20.232	24.483	1179.233
49	.6545	1.616	82.79	75.00	1.001	.984	.017	20.244	24.424	1277.188
50	.7045	1.740	82.67	74.92	.999	.988	-.013	20.213	24.533	1374.754
51	.7547	1.864	82.77	74.90	1.001	.990	.012	20.239	24.566	1472.709
52	.8045	1.988	82.69	74.85	1.000	.993	-.008	20.219	24.645	1569.864
53	1.1443	2.826	82.70	74.73	1.000	1.000	-.006	20.221	24.813	2232.938
54	1.4945	3.686	82.73	74.73	1.000	1.000	.002	20.229	24.821	2896.772
55	1.8242	4.504	82.53	74.72	.996	1.000	-.045	20.181	24.828	3559.631
56	2.1646	5.345	82.44	74.73	.997	1.000	-.069	20.158	24.820	4223.856
57	2.5045	6.184	82.45	74.75	.997	.999	-.067	20.160	24.797	4887.105

Table 74.

KLEMP807 TAPE 4648P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 4. GRID NO. 3

BOUNDARY LAYER PROPERTIES		LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY	=	82.277	82.277
FREE STREAM TEMPERATURE	=	74.812	
WALL TEMPERATURE	=	91.510	
WALL HEAT FLUX	=	.04790	
FREE STREAM DENSITY	=	.07440	
FREE STREAM KINEMATIC VISCOSITY	=	.0001655	
DENSITY OF FLUID AT WALL	=	.07215	
KINEMATIC VISCOSITY OF FLUID AT WALL	=	.0001747	
WALL/FREE STREAM DENSITY RATIO	=	.96971	
LOCATION REYNOLDS NUMBER (REX)	=	20056C5.17	
INPUT VALUE OF VELOCITY DELTA	=	.41000	
INPUT VALUE OF TEMPERATURE DELTA	=	.81000	
CALCULATED DELTA	=		.34858
DELTA 99.5% INPUT	=	.00000	
DISPLACEMENT THICKNESS (DELSTAR)	=	.03743	.03762
MOMENTUM THICKNESS (THETA)	=	.02546	.02590
ENERGY-DISSIPATION THICKNESS	=	.04657	.04697
ENTHALPY THICKNESS	=	.00265	.00266
SHAPE FACTOR 12 (DELSTAR/THETA)	=	1.46995	1.45277
SHAPE FACTOR 32 (ENERGY/THETA)	=	1.82897	1.81379
MOMENTUM THICKNESS REYNOLDS NUMBER	=	1055.21	1073.06
DISPLACEMENT THICKNESS REYNOLDS NUMBER	=	1551.11	1558.91
SKIN FRICTION COEFFICIENT	=	.004759	
FRICTION VELOCITY	=	4.07584	
LAW OF THE WALL CONSTANT (K)	=	.41000	
LAW OF THE WALL CONSTANT (C)	=	5.00000	
WAKE STRENGTH	=		-.14608
CLAUSERS 'DELTA' INTEGRAL	=	-.57991	-.71145
CLAUSERS 'G' INTEGRAL	=	3.78877	3.66401
DISPLACEMENT THICKNESS - CONSTANT DENSITY	=	.03169	.03254
MOMENTUM THICKNESS - CONSTANT DENSITY	=	.02576	.02620
SHAPE FACTOR 12 - CONSTANT DENSITY	=	1.23007	1.24162

LOCATION -X- 48.400CC

Z = -6 INCHES

K = 0.75 X 10^{-6}

Table 75.

KLDM.927 TAPE 4646P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 4. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE UTAU	U(+)	T(+)	Y(+)
1	.0063	.018	41.36	86.60	.503	.294	-10.040	10.147	7.228	12.306
2	.0076	.022	45.27	85.97	.550	.332	-9.080	11.107	8.160	14.833
3	.0087	.025	48.45	85.65	.589	.348	-8.301	11.886	8.571	16.972
4	.0095	.027	49.85	85.55	.606	.357	-7.955	12.232	8.766	18.527
5	.0108	.031	51.57	85.20	.627	.376	-7.534	12.653	9.291	21.055
6	.0122	.035	53.40	84.86	.649	.398	-7.066	13.100	9.604	23.776
7	.0137	.039	54.90	84.56	.667	.416	-6.718	13.469	10.245	26.692
8	.0147	.042	55.65	84.36	.676	.428	-6.532	13.654	10.530	28.637
9	.0164	.047	56.68	84.09	.689	.444	-6.280	13.907	10.926	31.942
10	.0190	.055	58.13	83.84	.707	.459	-5.924	14.262	11.295	36.996
11	.0206	.059	58.96	83.50	.717	.480	-5.720	14.467	11.600	40.107
12	.0222	.064	59.42	83.66	.722	.470	-5.608	14.579	11.569	43.217
13	.0236	.068	59.89	83.50	.728	.479	-5.494	14.693	11.795	45.939
14	.0254	.073	60.48	83.15	.735	.496	-5.346	14.839	12.262	49.438
15	.0274	.079	61.13	82.99	.743	.510	-5.189	14.998	12.555	53.327
16	.0294	.084	61.67	82.95	.750	.513	-5.055	15.131	12.611	57.215
17	.0312	.090	62.06	82.96	.754	.511	-4.961	15.225	12.569	60.714
18	.0378	.109	63.65	82.46	.774	.541	-4.569	15.617	13.309	73.545
19	.0446	.128	65.15	82.05	.792	.566	-4.201	15.985	13.934	86.765
20	.0515	.148	66.42	81.83	.807	.580	-3.892	16.295	14.268	100.179
21	.0576	.165	67.45	81.71	.820	.587	-3.637	16.549	14.436	112.038
22	.0644	.185	68.34	81.36	.831	.606	-3.419	16.768	14.959	125.258
23	.0714	.205	69.52	81.41	.845	.605	-3.130	17.056	14.684	138.867
24	.0778	.223	70.08	80.79	.852	.642	-2.993	17.194	15.790	151.309
25	.0846	.243	71.09	80.40	.864	.665	-2.746	17.441	16.365	164.918
26	.0916	.263	71.60	80.36	.871	.667	-2.605	17.581	16.423	178.138
27	.0976	.280	72.33	80.24	.879	.675	-2.440	17.746	16.599	189.802
28	.1045	.300	73.03	80.15	.888	.680	-2.270	17.917	16.739	203.217
29	.1117	.321	73.67	79.83	.895	.700	-2.112	18.075	17.212	217.214
30	.1174	.337	74.07	79.75	.900	.704	-2.014	18.172	17.332	228.296
31	.1248	.358	74.66	79.62	.907	.712	-1.869	18.318	17.514	242.682
32	.1316	.378	75.16	79.42	.913	.724	-1.747	18.440	17.616	255.902
33	.1486	.426	76.31	78.82	.927	.759	-1.465	18.722	18.684	288.951
34	.1662	.477	77.34	78.55	.940	.776	-1.212	18.975	19.098	323.168
35	.1834	.526	78.18	78.43	.951	.783	-.960	19.206	19.272	356.606
36	.2013	.576	78.89	77.84	.959	.818	-.830	19.357	20.136	391.405
37	.2166	.627	79.51	77.33	.966	.849	-.680	19.507	20.697	425.038
38	.2364	.678	80.05	77.22	.973	.868	-.548	19.679	21.348	459.643
39	.2536	.728	80.35	77.12	.977	.868	-.472	19.715	21.353	493.082
40	.2716	.779	80.69	77.00	.981	.869	-.390	19.796	21.378	528.076
41	.2885	.829	81.03	76.46	.985	.901	-.306	19.880	22.178	561.514
42	.3065	.880	81.23	76.18	.987	.916	-.256	19.931	22.582	596.508
43	.3562	1.012	81.78	76.09	.994	.923	-.123	20.064	22.714	692.546
44	.4065	1.167	82.06	75.80	.997	.941	-.054	20.132	23.150	792.918
45	.4565	1.310	82.24	75.43	1.000	.963	-.009	20.177	23.697	887.734
46	.4965	1.424	82.26	75.37	1.000	.966	-.005	20.181	23.778	965.328
47	.5465	1.567	82.34	75.20	1.001	.977	.015	20.201	24.036	1062.144
48	.6065	1.741	82.42	75.13	1.002	.981	.036	20.222	24.141	1179.738
49	.6565	1.883	82.52	75.04	1.003	.987	.061	20.247	24.273	1276.359
50	.7066	2.028	82.49	74.99	1.003	.989	.053	20.239	24.339	1374.147
51	.7563	2.170	82.37	74.97	1.001	.990	.023	20.210	24.365	1470.360
52	.8064	2.314	82.56	74.92	1.003	.993	.069	20.255	24.444	1567.760
53	1.1467	3.290	82.36	74.82	1.001	.999	.024	20.211	24.586	2229.357
54	1.4867	4.265	82.43	74.81	1.002	1.000	.037	20.224	24.601	2890.350
55	1.8261	5.279	82.35	74.80	1.001	1.001	.018	20.205	24.624	3550.177
56	2.1663	6.215	82.41	74.83	1.002	.999	.032	20.218	24.576	4211.560
57	2.5067	7.191	82.36	74.88	1.001	.996	.020	20.206	24.506	4873.331

Table 75.

KLEMP67 TAPE 4648P- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 1. GRID NO. 3

BOUNDARY LAYER PROPERTIES

	LINEAR INTERPOLATION TO WALL	STANDARD SUBLAYER FUNCTION FROM WALL TO Y+=35
FREE STREAM VELOCITY =	110.334	110.334
FREE STREAM TEMPERATURE =	75.431	
WALL TEMPERATURE =	89.970	
WALL HEAT FLUX =	.04950	
FREE STREAM DENSITY =	.07509	
FREE STREAM KINEMATIC VISCOSITY =	.0001641	
DENSITY OF FLUID AT WALL =	.07310	
KINEMATIC VISCOSITY OF FLUID AT WALL =	.0001721	
WALL/FREE STREAM DENSITY RATIO =	.97355	
LOCATION REYNOLDS NUMBER (REX) =	3159984.16	
INPUT VALUE OF VELOCITY DELTA =	.41000	
INPUT VALUE OF TEMPERATURE DELTA =	.81000	
CALCULATED DELTA =		.29211
DELTA 99.5% INPUT =	.00000	
DISPLACEMENT THICKNESS (DELSTAR) =	.02957	.02964
MOMENTUM THICKNESS (THETA) =	.02003	.02039
ENERGY-DISSIPATION THICKNESS =	.03681	.03717
ENTHALPY THICKNESS =	.00247	.00247
SHAPE FACTOR 12 (DELSTAR/THETA) =	1.47578	1.45349
SHAPE FACTOR 32 (ENERGY/THETA) =	1.83731	1.82299
MOMENTUM THICKNESS REYNOLDS NUMBER =	1122.49	1142.43
DISPLACEMENT THICKNESS REYNOLDS NUMBER =	1656.55	1660.50
SKIN FRICTION COEFFICIENT =	.004735	
FRICTION VELOCITY =	5.44116	
LAW OF THE WALL CONSTANT (K) =	.41000	
LAW OF THE WALL CONSTANT (C) =	5.00000	
WAKE STRENGTH =		-.19110
CLAUSERS 'DELTA' INTEGRAL =	-.45573	-.55506
CLAUSERS 'C' INTEGRAL =	2.89058	2.76607
DISPLACEMENT THICKNESS - CONSTANT DENSITY =	.02489	.02737
MOMENTUM THICKNESS - CONSTANT DENSITY =	.02027	.02064
SHAPE FACTOR 12 - CONSTANT DENSITY =	1.22762	1.32624

LOCATION -X- 56.40000

Z = CENTERLINE

K = 0.75 X 10^{-6}

Table 76.

NLCMW8U7 TAPE 4046R- FILES 17-36, RUN 4, PTS.1-20 11/11/80

RUN NO. 4. POINT 1. GRID NO. 3

REDUCED PROFILE DATA

N	Y INCHES	Y/ DELTA	U FT/SEC	T DEG.F	U/UE	THETA	U-UE / UTAU	U(+)	T(+)	Y(+)
1	.0045	.017	53.66	87.29	.496	.196	-10.413	9.865	5.546	12.728
2	.0058	.020	58.76	86.53	.528	.236	-9.570	10.707	6.628	15.363
3	.0074	.025	66.05	85.90	.599	.280	-8.139	12.139	7.842	19.579
4	.0079	.027	69.09	85.75	.626	.290	-7.580	12.698	8.130	20.897
5	.0088	.030	71.51	85.53	.648	.305	-7.136	13.141	8.555	23.268
6	.0107	.037	75.21	85.12	.682	.333	-6.456	13.822	9.350	28.275
7	.0120	.041	76.89	84.92	.697	.348	-6.146	14.132	9.748	31.701
8	.0128	.044	77.83	84.82	.705	.354	-5.973	14.305	9.929	33.809
9	.0152	.052	79.82	84.41	.723	.382	-5.607	14.671	10.720	40.133
10	.0170	.058	81.12	84.37	.735	.395	-5.369	14.909	10.605	44.876
11	.0190	.065	82.11	83.99	.744	.411	-5.187	15.091	11.525	50.147
12	.0207	.071	82.89	83.90	.751	.416	-5.044	15.234	11.710	54.626
13	.0222	.076	83.61	83.84	.758	.422	-4.911	15.367	11.624	58.579
14	.0239	.082	84.30	83.72	.764	.430	-4.784	15.493	12.046	63.059
15	.0259	.089	85.07	83.52	.771	.444	-4.644	15.634	12.446	68.329
16	.0279	.095	85.94	83.38	.779	.453	-4.484	15.794	12.712	73.599
17	.0297	.102	86.56	83.30	.785	.459	-4.369	15.908	12.670	78.343
18	.0363	.124	88.79	82.90	.805	.486	-3.959	16.319	13.630	95.735
19	.0429	.147	90.67	82.53	.822	.512	-3.613	16.665	14.343	113.126
20	.0500	.171	92.33	82.43	.837	.518	-3.308	16.969	14.532	131.836
21	.0560	.192	93.74	82.20	.850	.534	-3.049	17.229	14.985	147.647
22	.0634	.217	95.02	81.76	.864	.565	-2.815	17.462	15.637	167.147
23	.0701	.240	96.43	81.58	.874	.579	-2.556	17.721	16.224	164.802
24	.0758	.260	97.40	81.38	.883	.593	-2.378	17.900	16.624	199.822
25	.0831	.285	98.50	81.14	.893	.606	-2.164	18.113	17.037	219.059
26	.0901	.309	99.45	81.14	.903	.607	-1.964	18.313	17.026	237.505
27	.0960	.329	100.26	80.95	.909	.616	-1.851	18.427	17.315	253.052
28	.1030	.353	101.17	80.61	.917	.644	-1.684	18.594	16.657	271.498
29	.1101	.377	101.78	80.37	.923	.660	-1.571	18.706	18.519	290.209
30	.1159	.397	102.49	79.98	.929	.687	-1.441	18.837	19.256	305.491
31	.1230	.421	103.01	79.97	.934	.688	-1.346	18.932	19.287	324.201
32	.1300	.445	103.76	80.17	.940	.674	-1.208	19.070	18.690	342.647
33	.1474	.505	105.15	79.23	.953	.739	-.953	19.325	20.707	388.498
34	.1646	.564	106.03	78.85	.961	.762	-.791	19.486	21.374	433.823
35	.1820	.623	106.97	78.59	.970	.782	-.618	19.660	21.937	479.674
36	.1999	.684	107.82	78.24	.977	.807	-.461	19.816	22.626	526.843
37	.2170	.743	108.20	77.70	.981	.844	-.391	19.886	23.664	571.904
38	.2351	.805	108.75	77.43	.986	.863	-.292	19.986	24.185	619.600
39	.2520	.863	109.09	77.37	.989	.867	-.229	20.049	24.209	664.134
40	.2698	.924	109.37	76.98	.991	.895	-.177	20.101	25.084	711.039
41	.2870	.983	109.50	77.05	.992	.888	-.154	20.124	24.908	756.364
42	.3050	1.044	109.72	76.79	.994	.907	-.113	20.164	25.426	803.796
43	.3540	1.214	109.90	76.32	.996	.939	-.060	20.197	26.319	934.499
44	.4049	1.386	110.16	76.07	.999	.956	-.028	20.250	26.607	1067.046
45	.4550	1.558	110.26	76.02	.999	.959	-.013	20.264	26.694	1199.067
46	.5050	1.729	110.38	75.88	1.000	.969	.006	20.286	27.176	1330.824
47	.5549	1.899	110.36	75.73	1.000	.980	.005	20.283	27.465	1462.053
48	.6051	2.072	110.42	75.71	1.001	.981	.015	20.293	27.493	1594.601
49	.6550	2.242	110.24	75.54	.999	.992	-.018	20.260	27.620	1726.094
50	.7050	2.414	110.26	75.50	.999	.995	-.013	20.265	27.903	1857.851
51	.7550	2.585	110.22	75.52	.999	.994	-.021	20.256	27.869	1989.608
52	.8050	2.756	110.23	75.52	.999	.994	-.019	20.259	27.671	2121.365
53	1.0450	3.578	110.14	75.41	.998	1.001	-.036	20.241	28.074	2753.798
54	1.2851	4.400	110.09	75.45	.998	.999	-.045	20.233	28.010	3386.494
55	1.5252	5.221	110.06	75.43	.998	1.000	-.051	20.227	28.031	4019.191
56	1.7650	6.042	109.94	75.44	.996	.999	-.073	20.205	28.020	4651.097
57	2.0051	6.864	109.29	75.49	.991	.996	-.192	20.086	27.933	5263.793

Table 76.

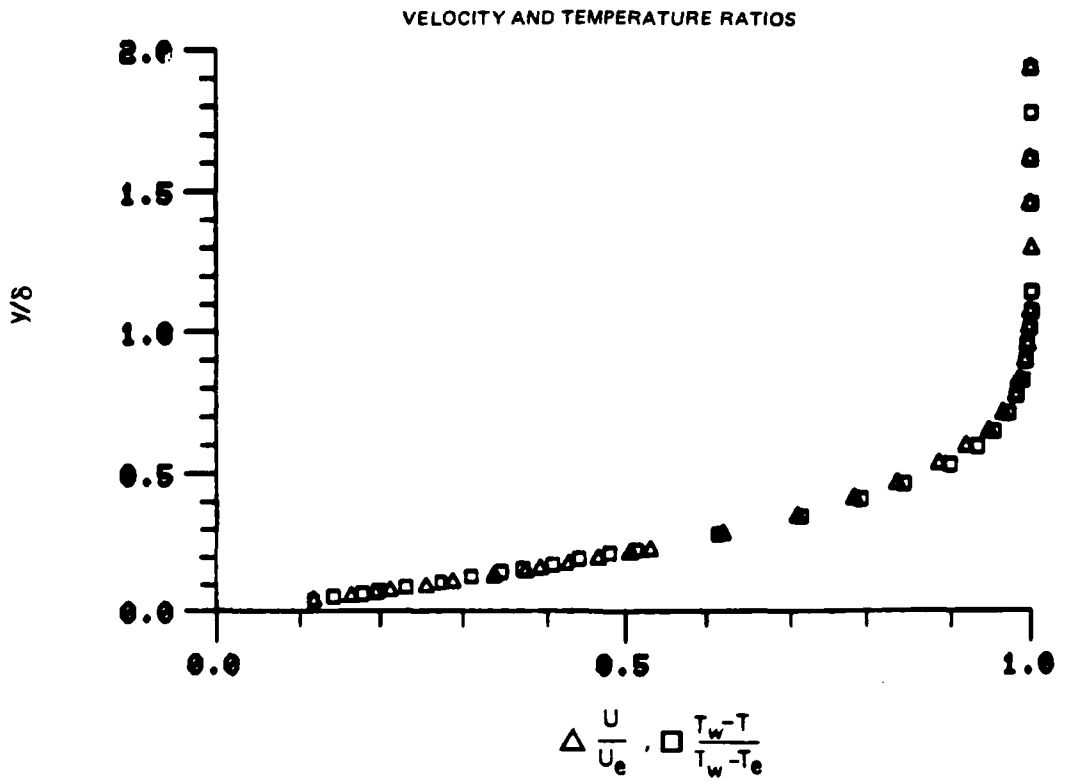


Figure 1 . Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 23

78-12-100-1

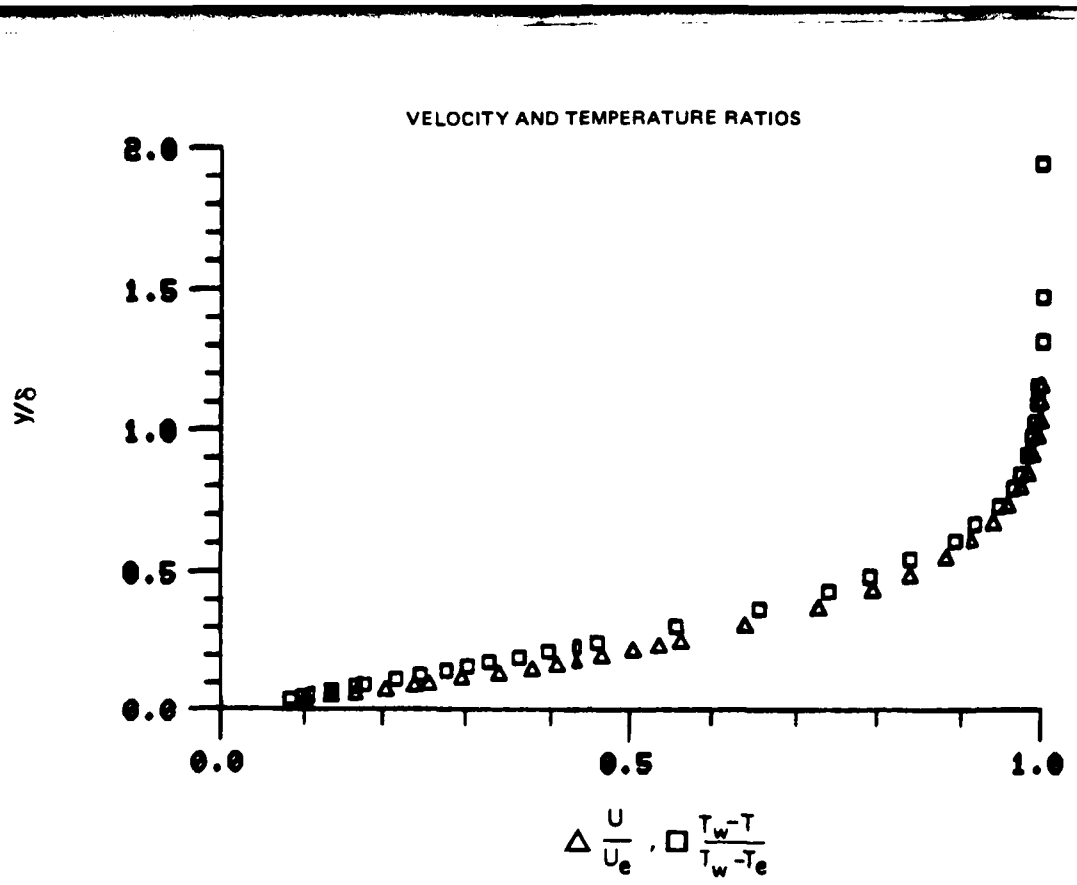


Figure 2 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.21

78-12-100-1

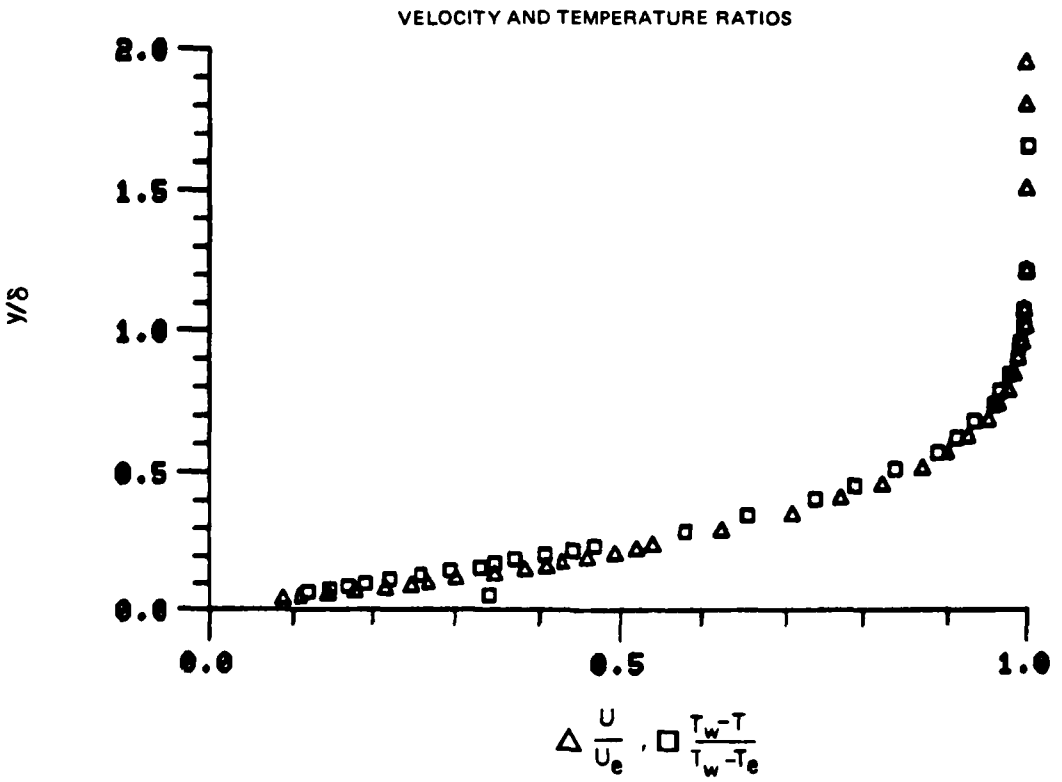


Figure 3 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.22

78-12-100-1

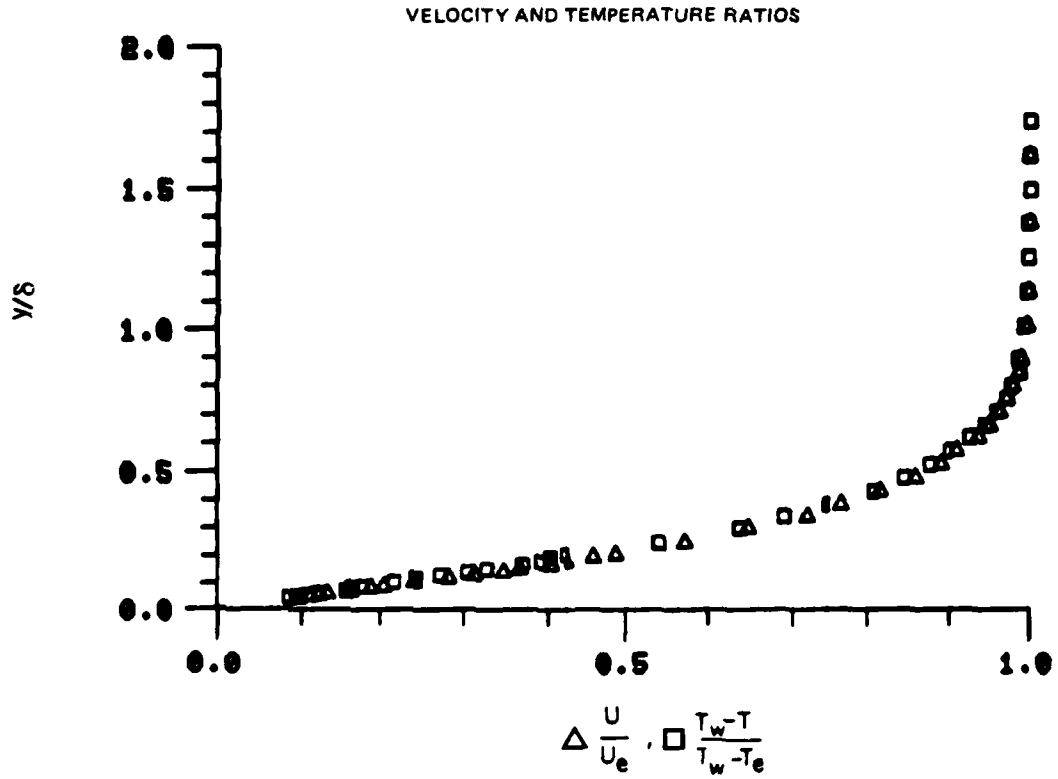


Figure 4 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.20

78-12-100-1

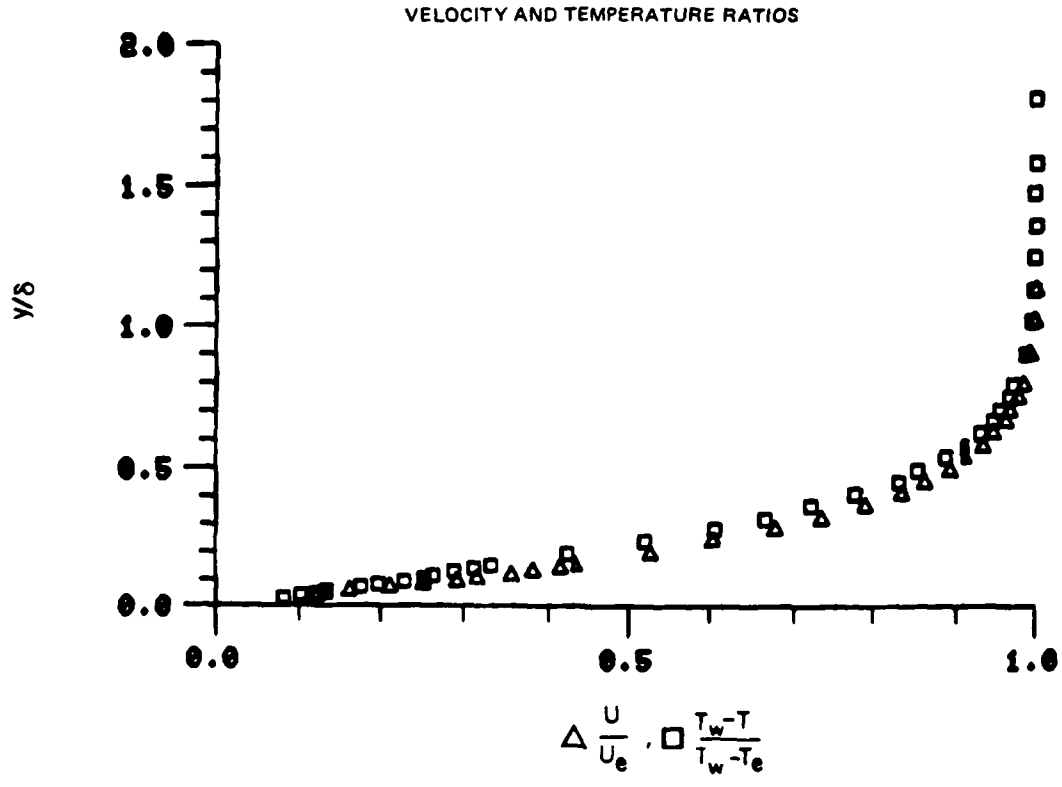


Figure 5 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.17

78-12-100-1

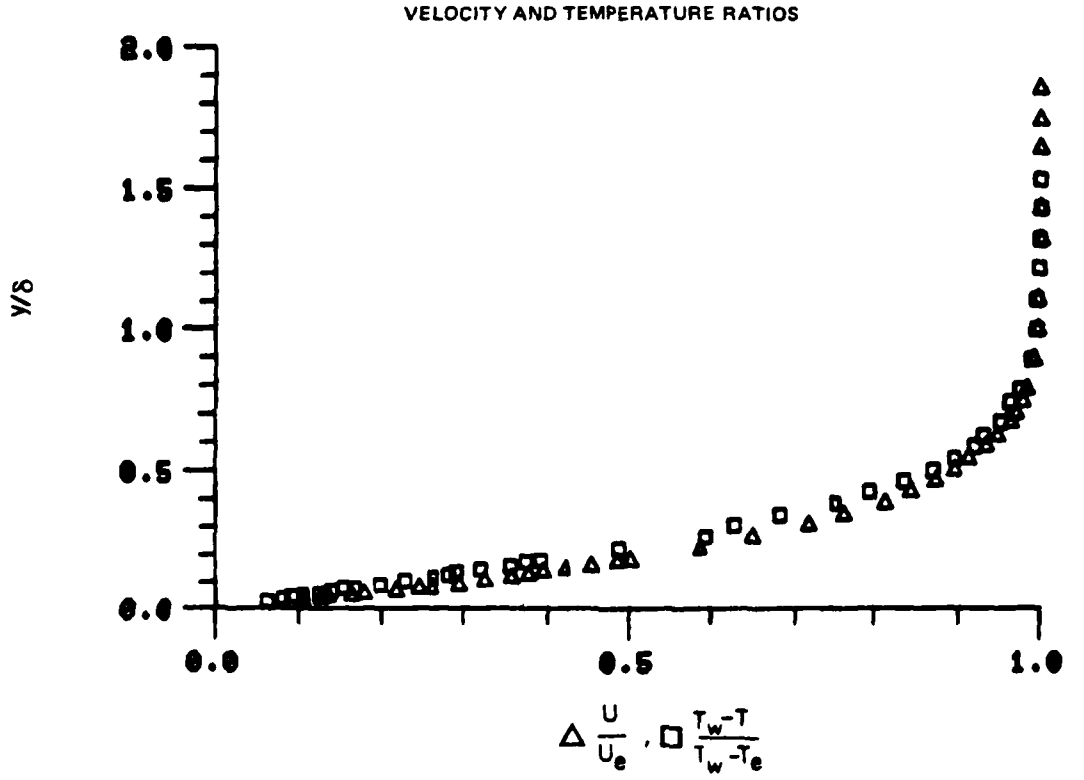


Figure 6 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.18

78-12-100-1

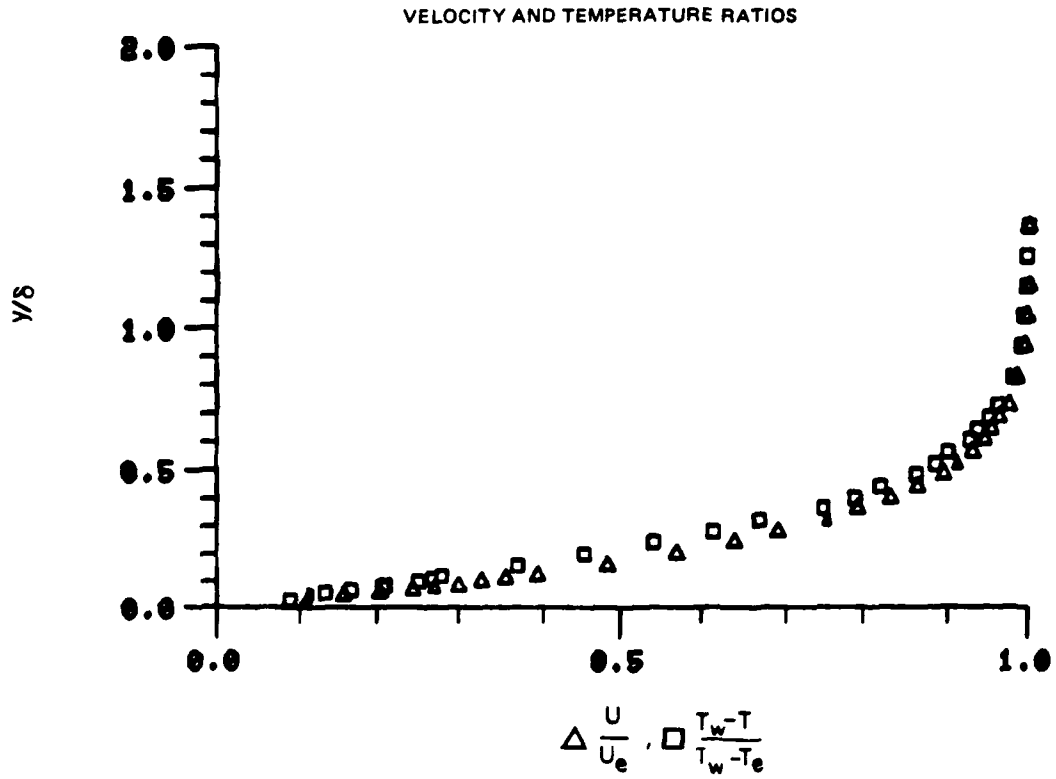


Figure 7 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.19

78-12-100-1

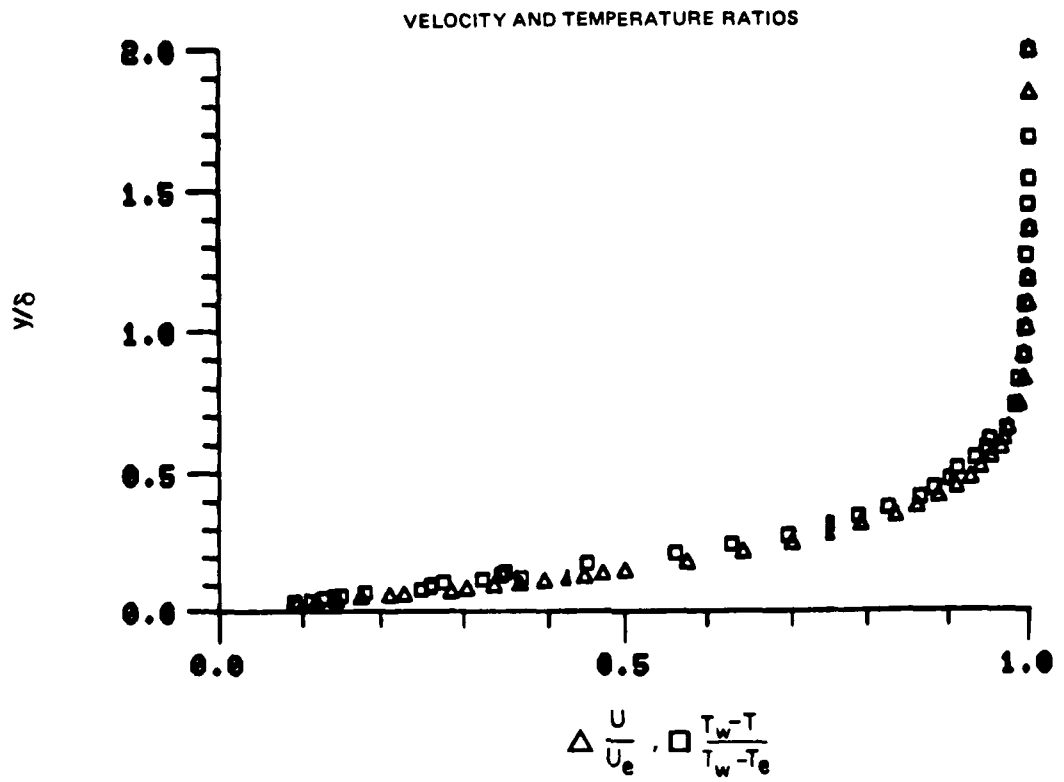


Figure 8 . Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.16

78-12-100-1

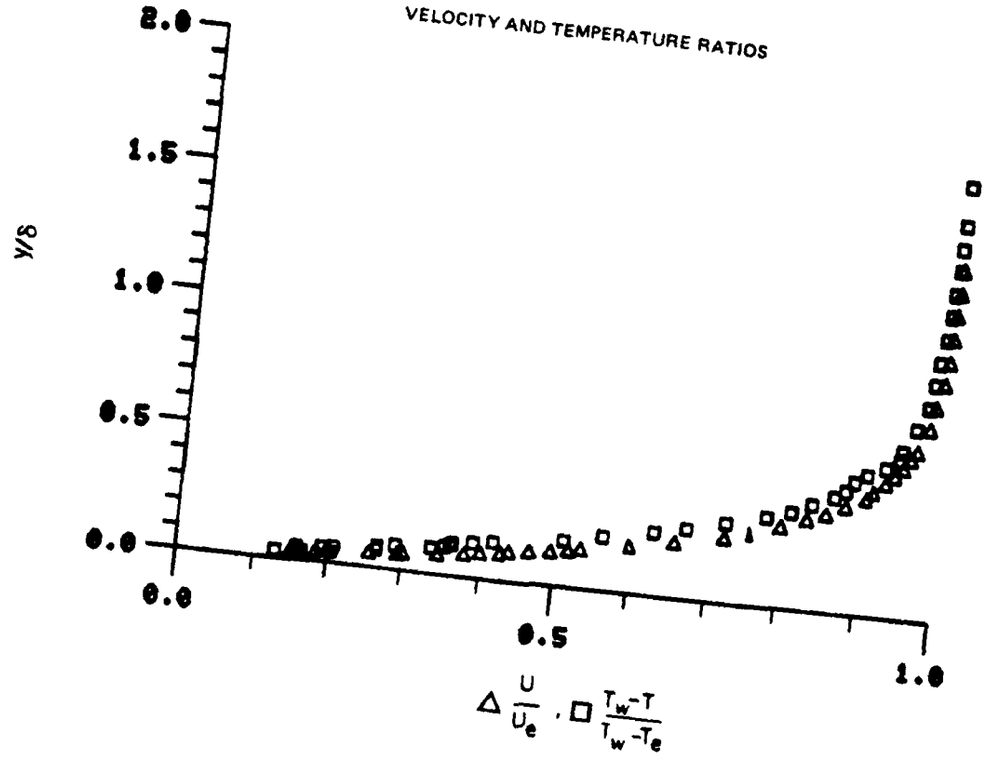


Figure 9. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.13

78-12-100-1

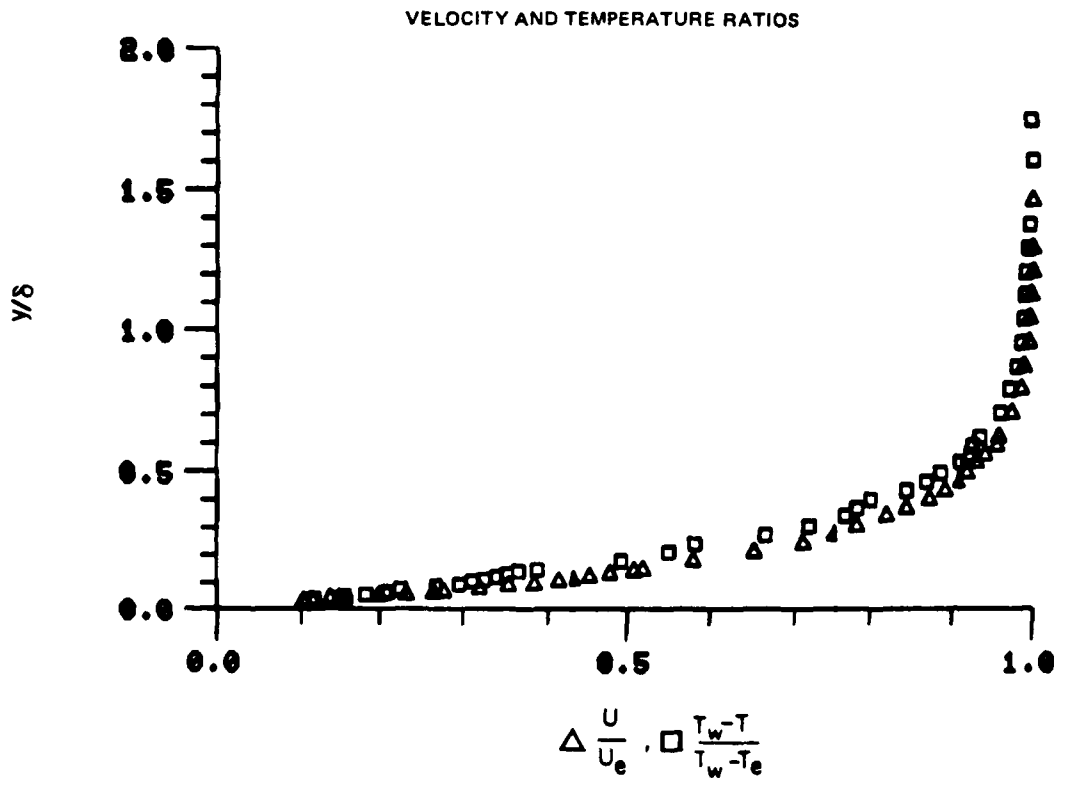


Figure 10. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.15

78-12-100-1

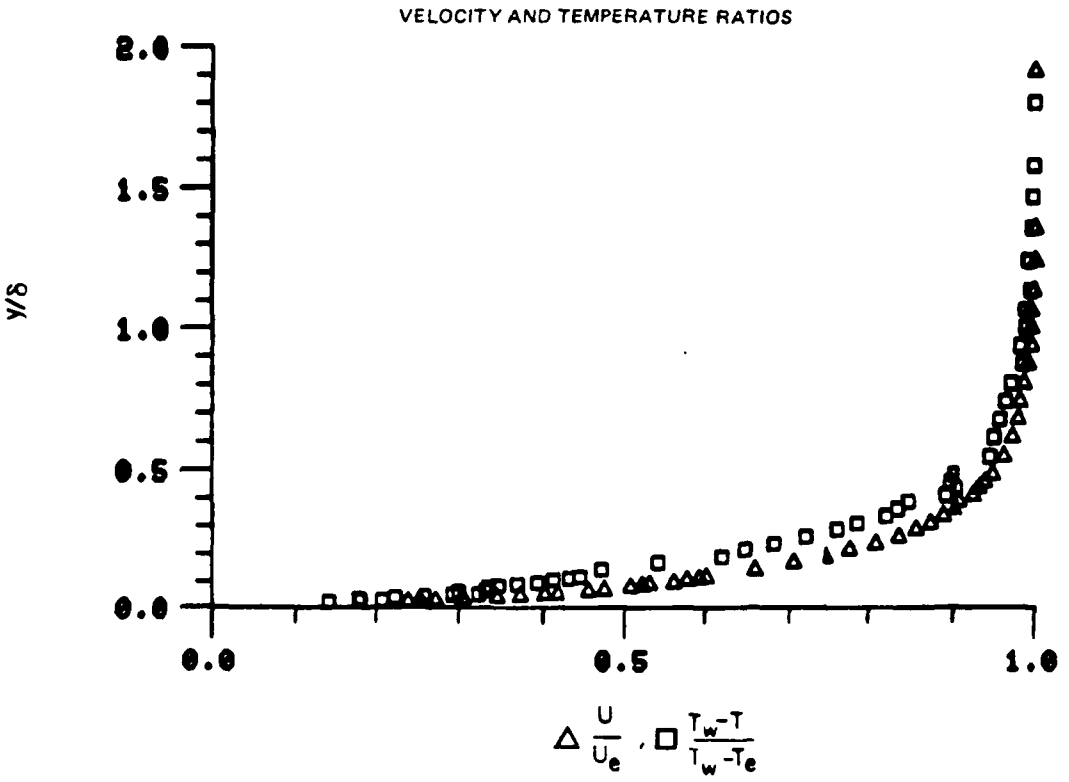


Figure 11. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 12

78-12-100-1

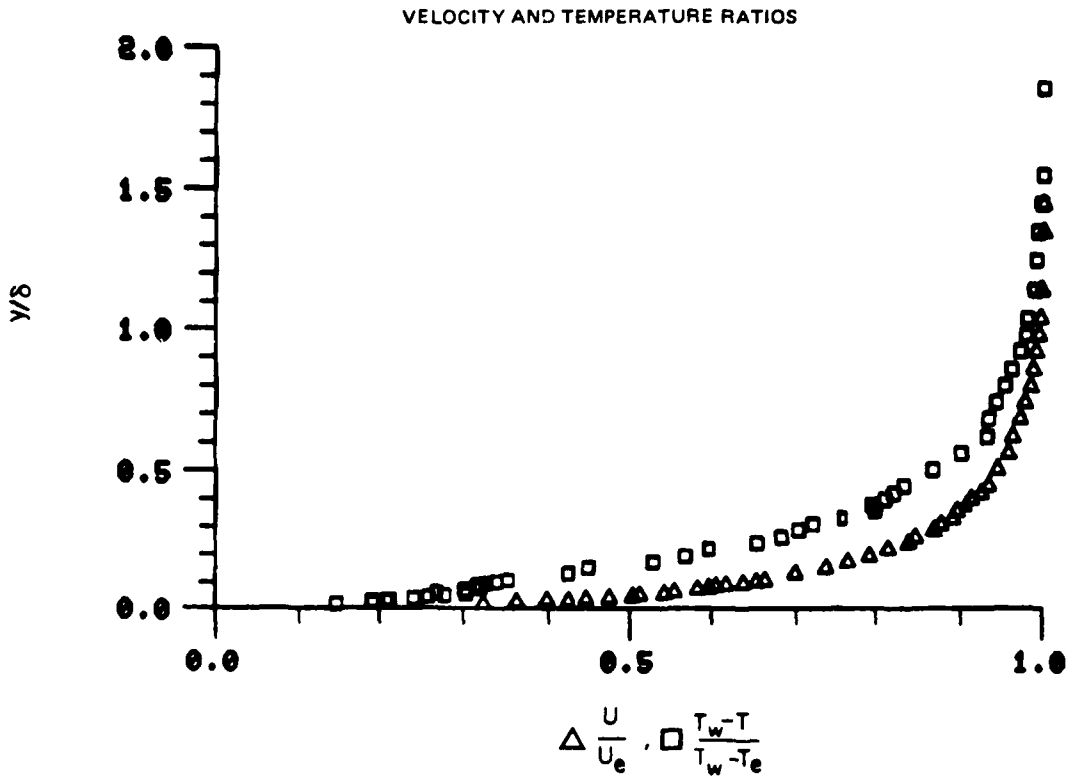


Figure 12. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 9

78-12-100-1

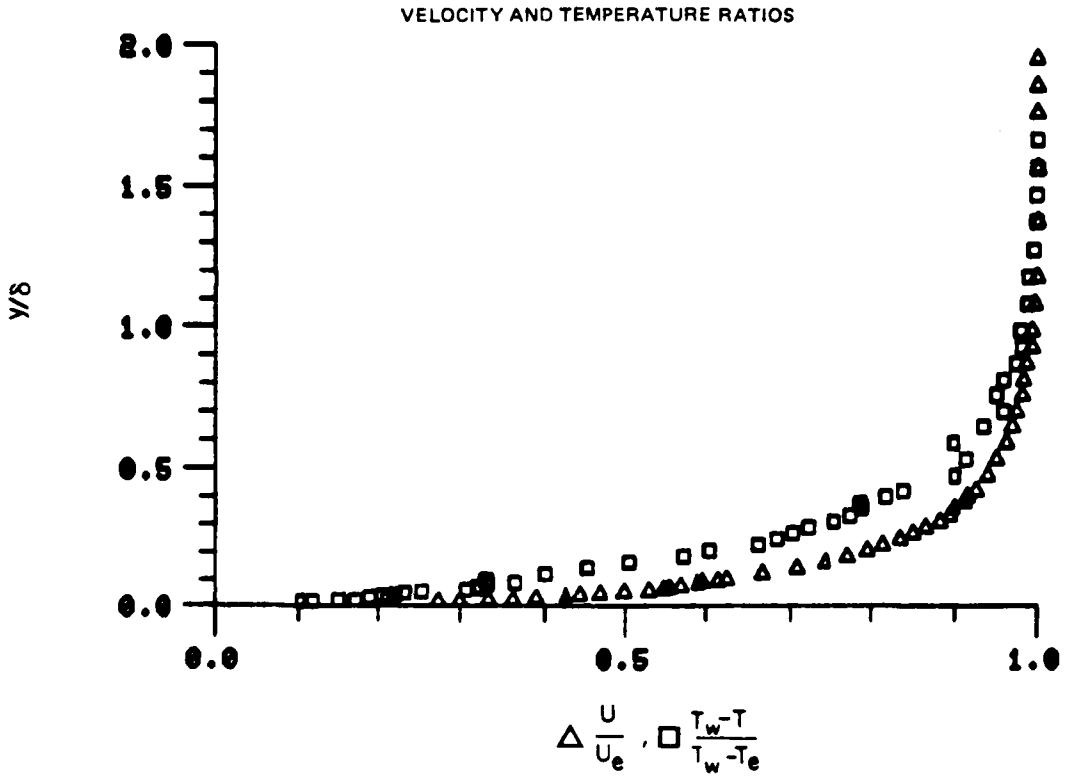


Figure 13. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.10

78-12-100-1

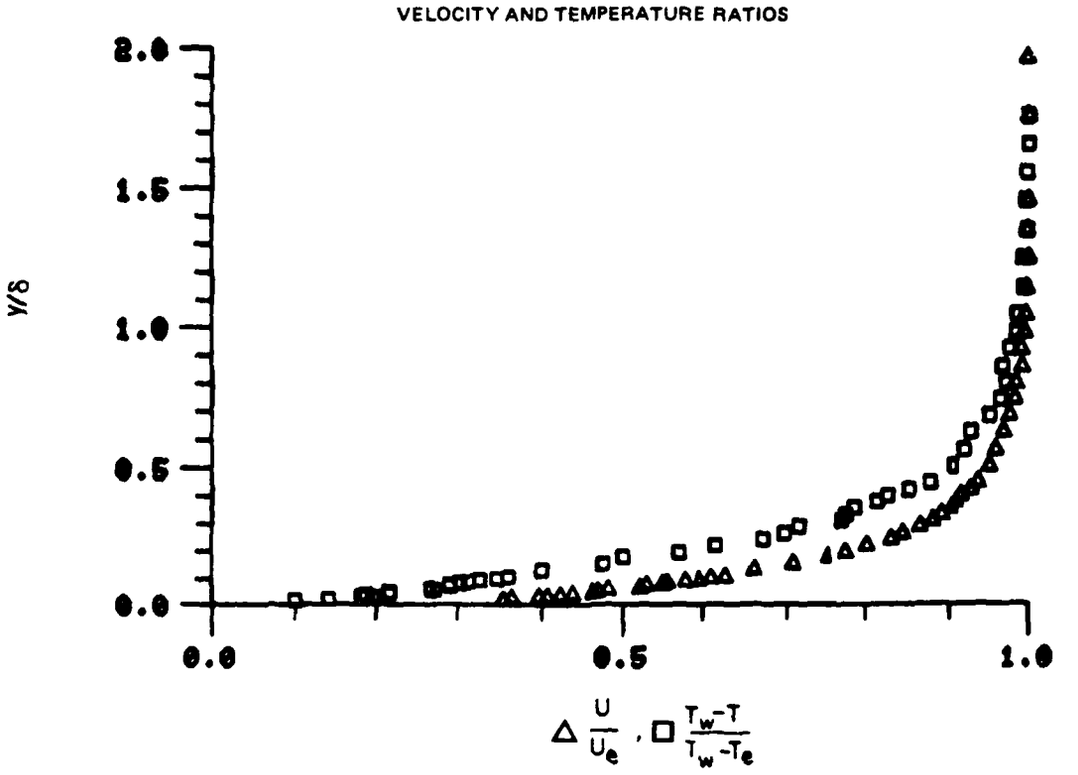


Figure 14. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 11

78-12-100-1

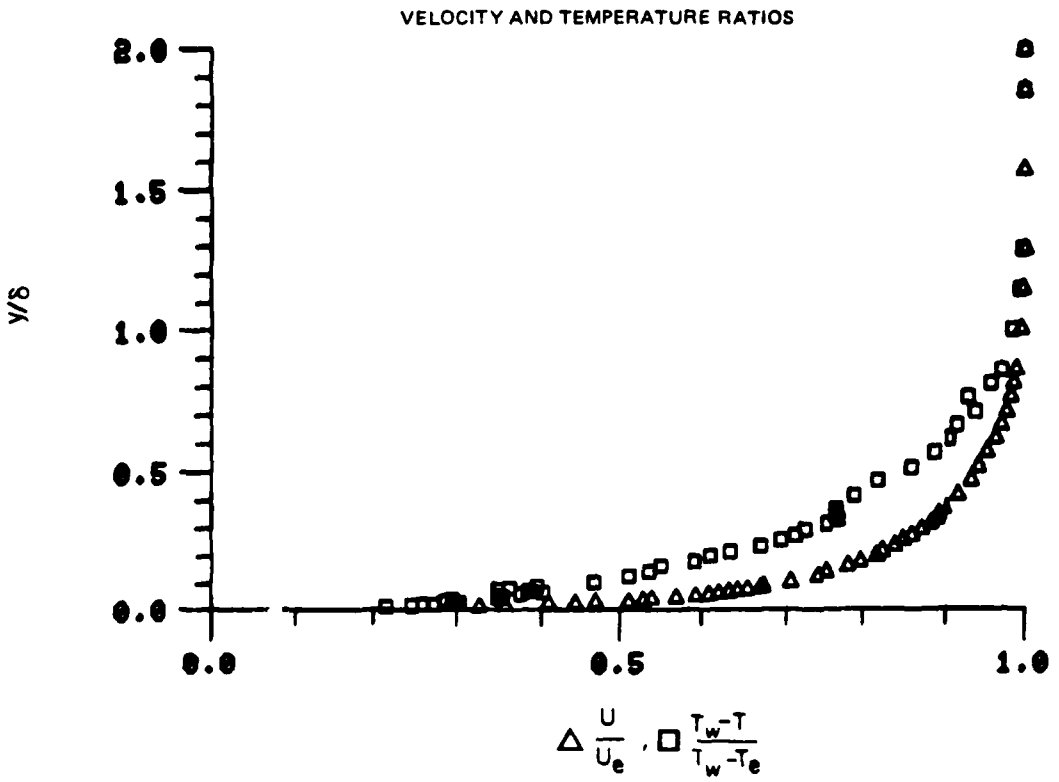
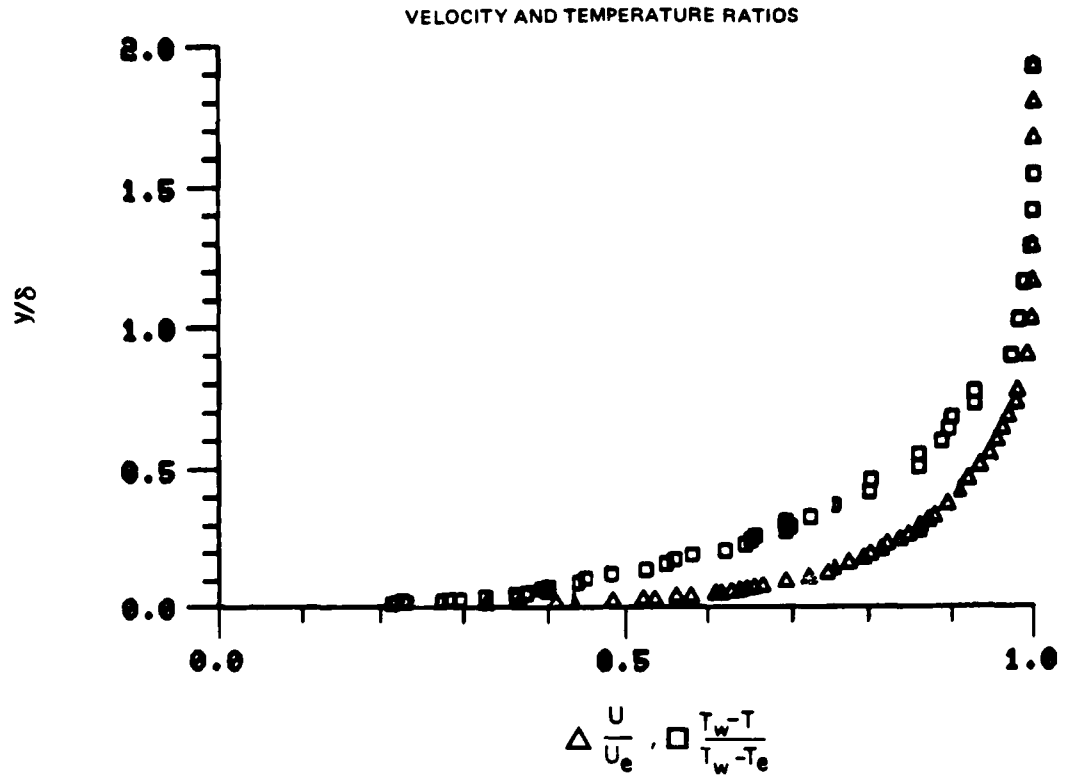


Figure 15. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 8

78-12-100-1



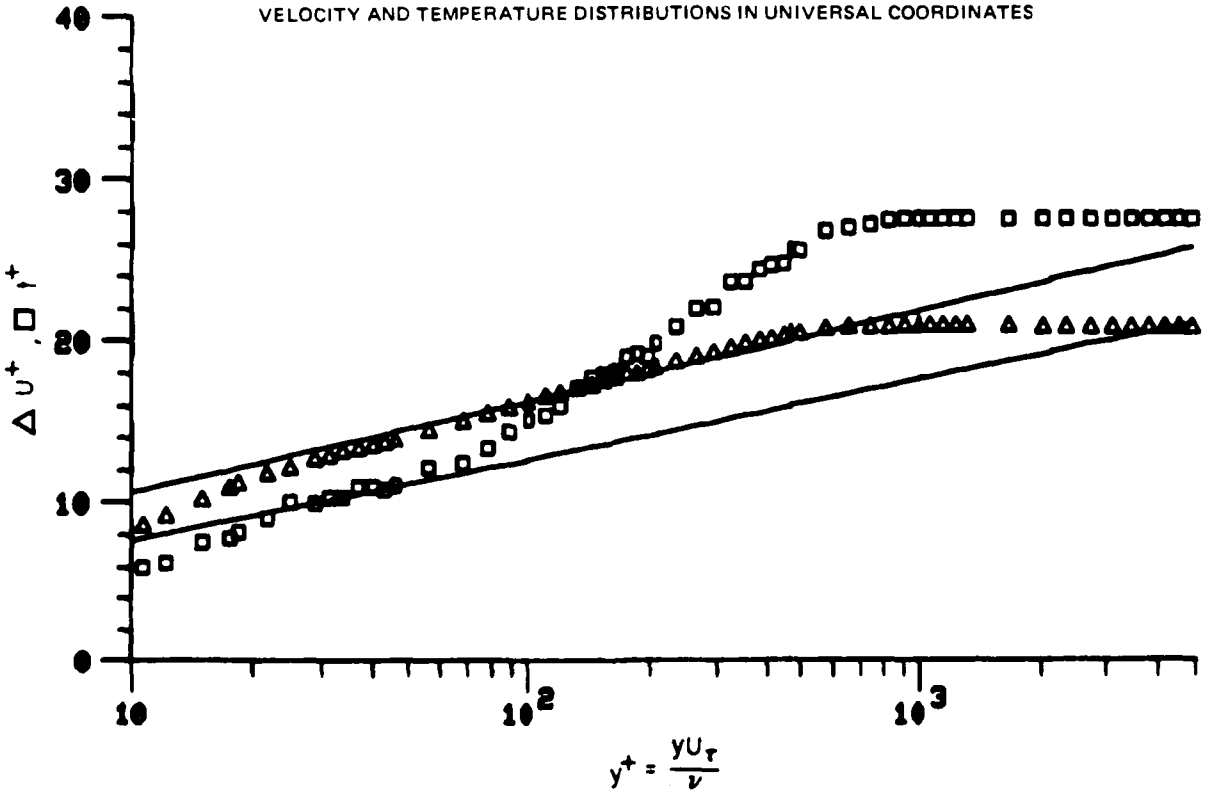
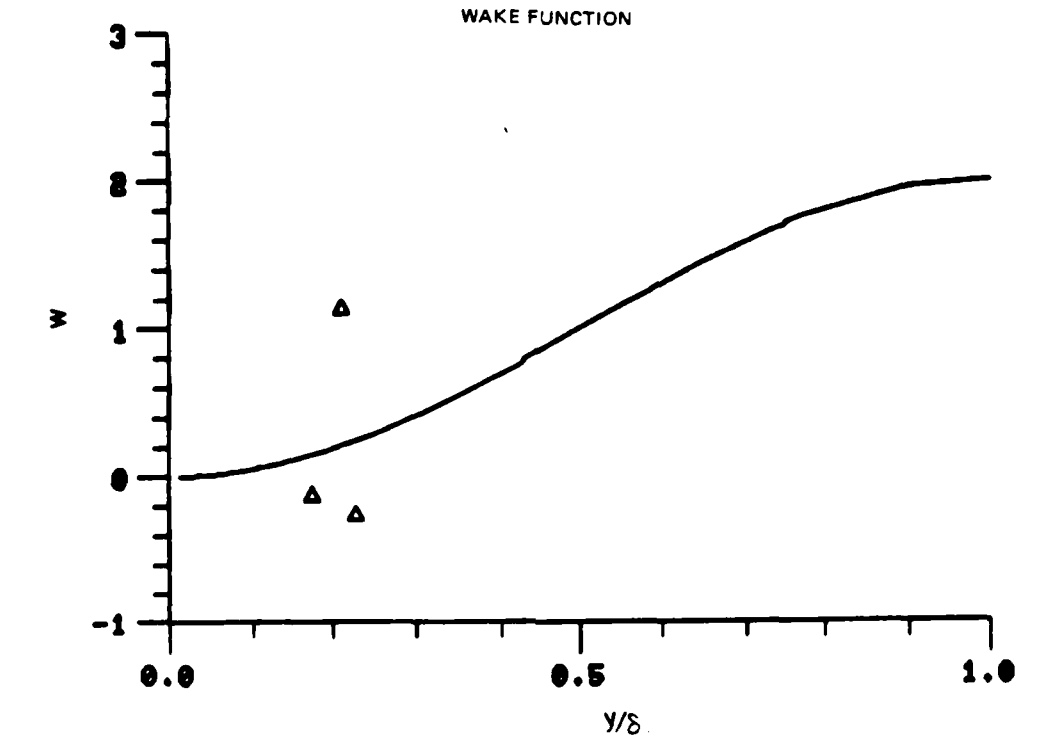


Figure 16. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 5

78-12-100-1



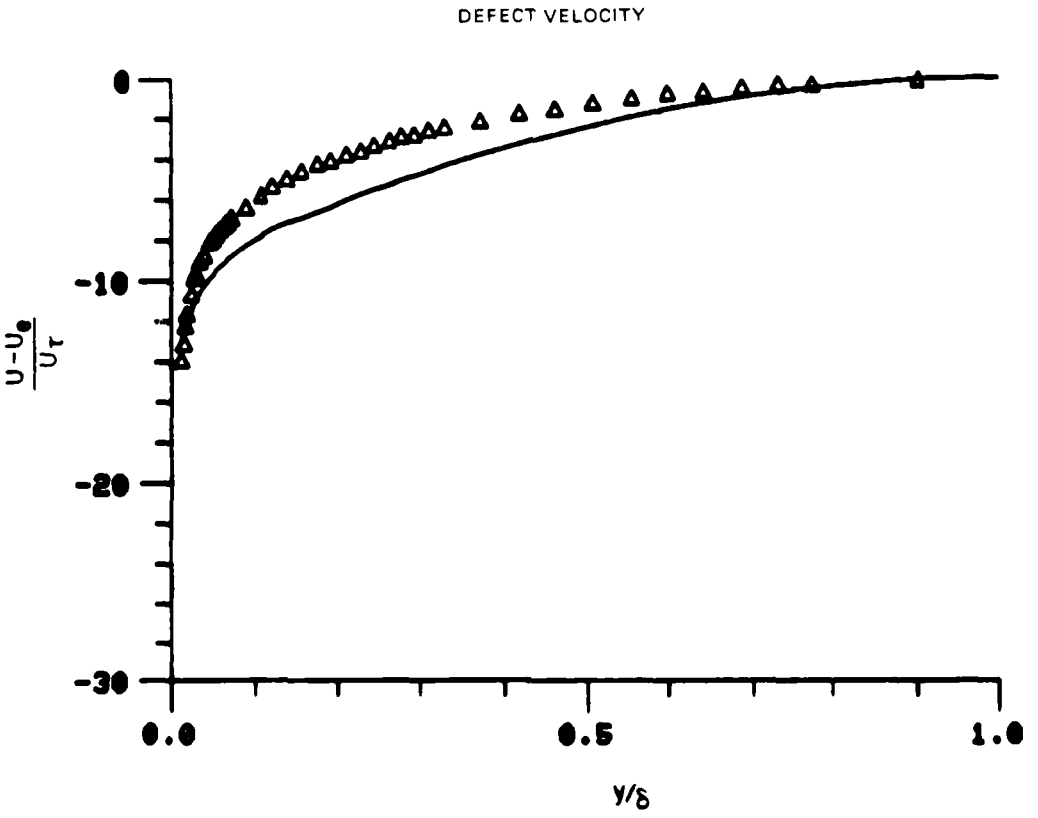
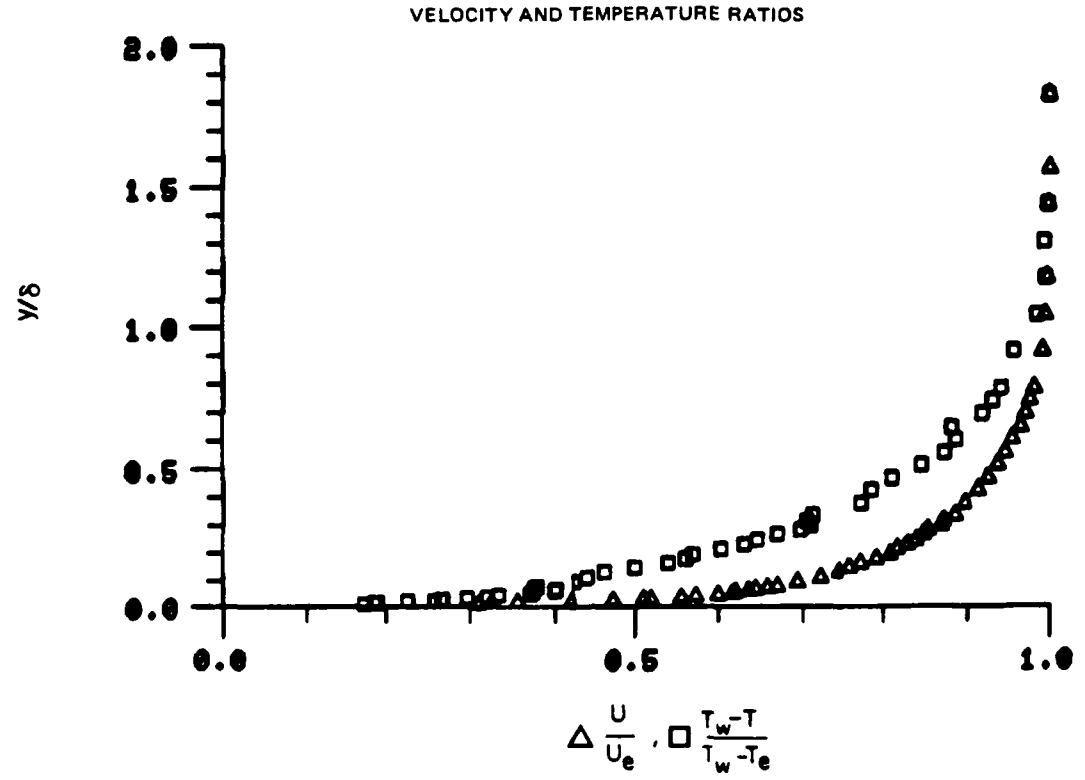


Figure 16. Boundary Layer Velocity Profiles
Run No.2 Point No.5

78-12-100-2



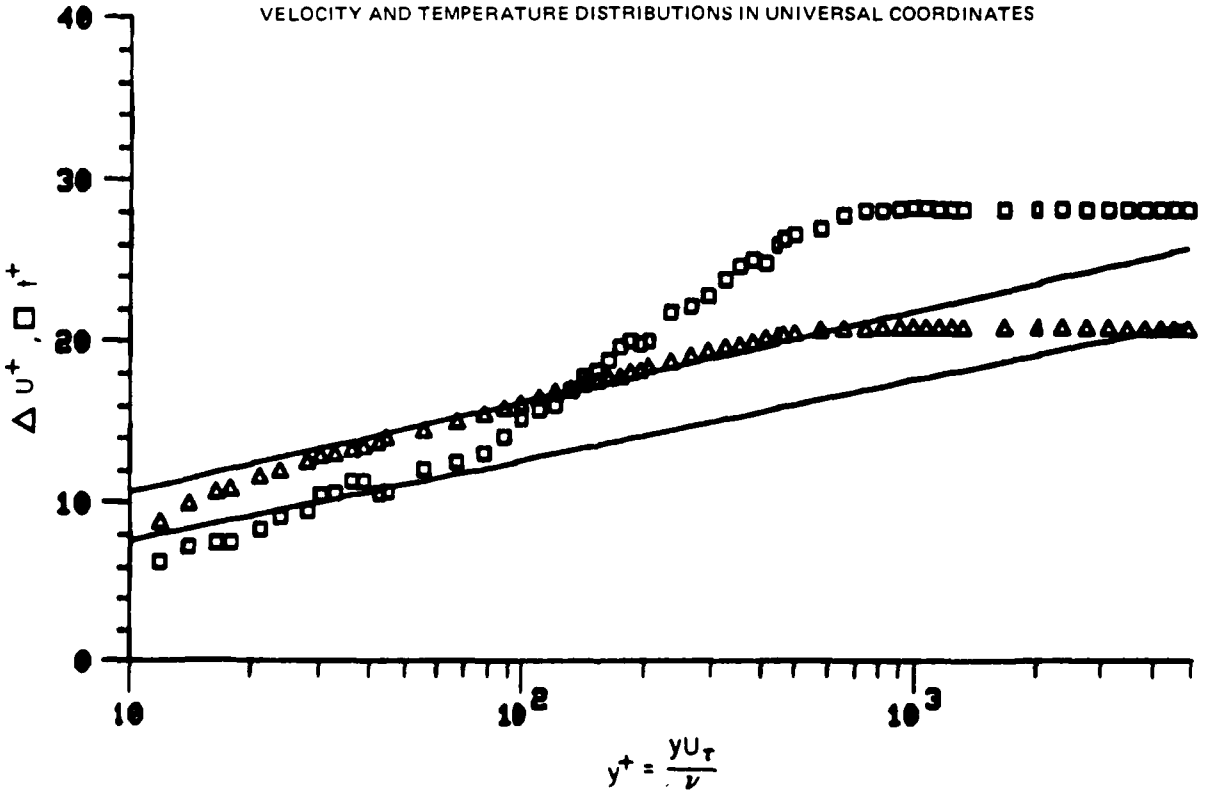
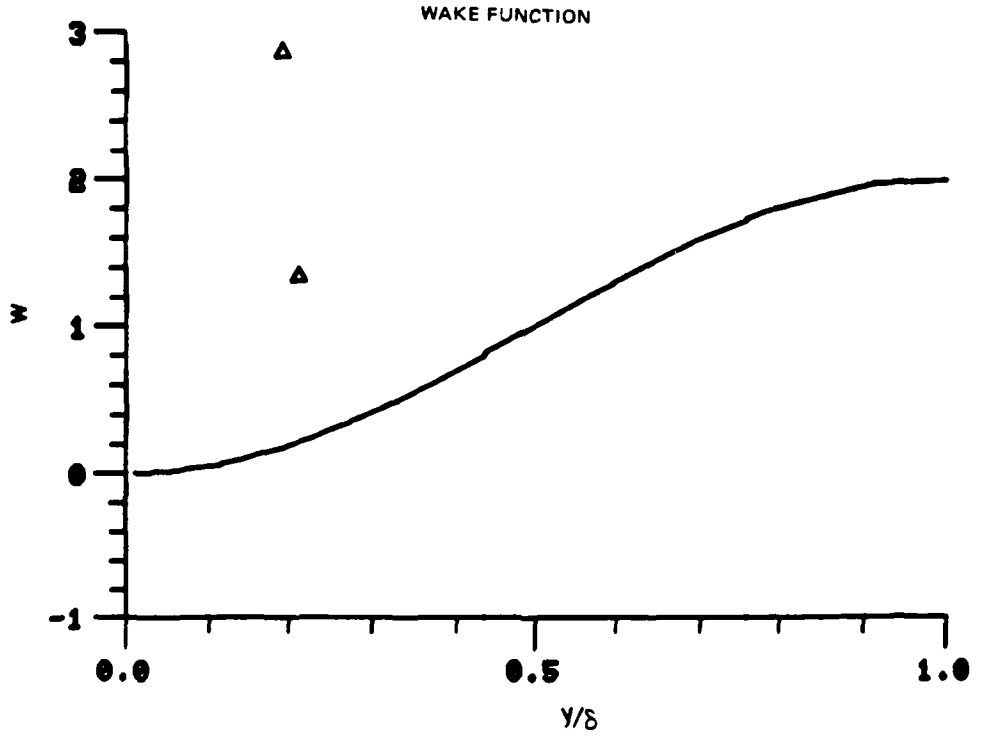


Figure 17. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.6

78-12-100-1



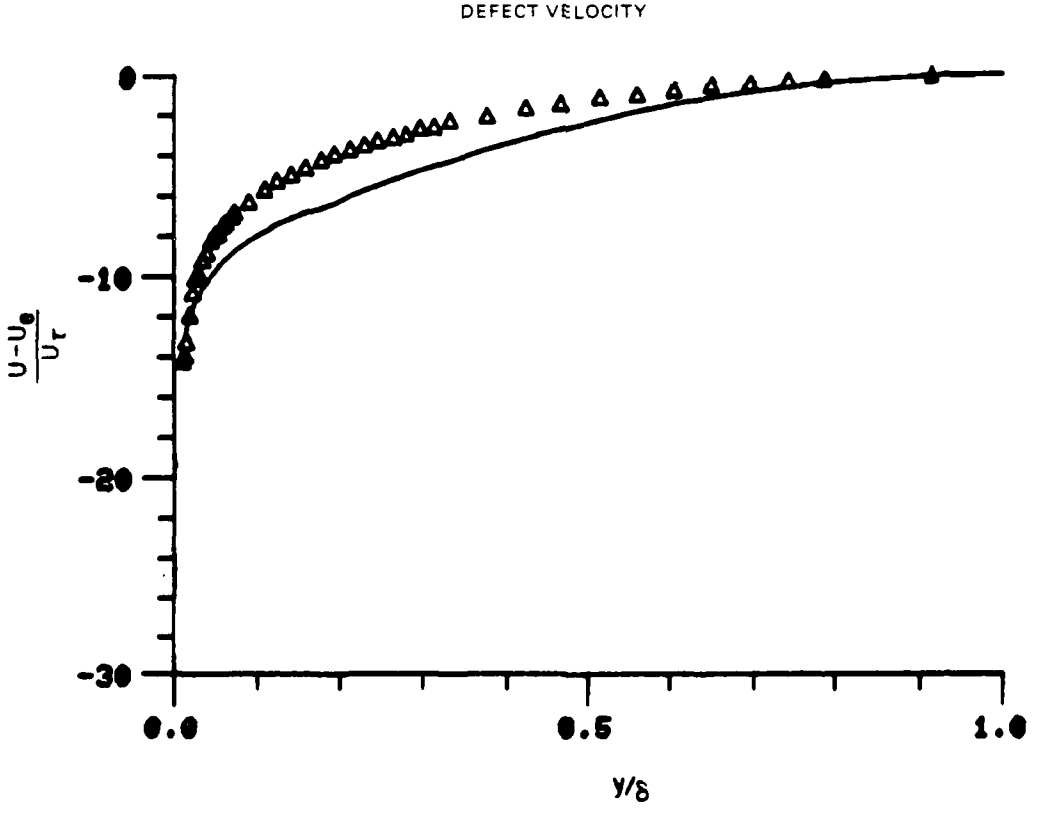
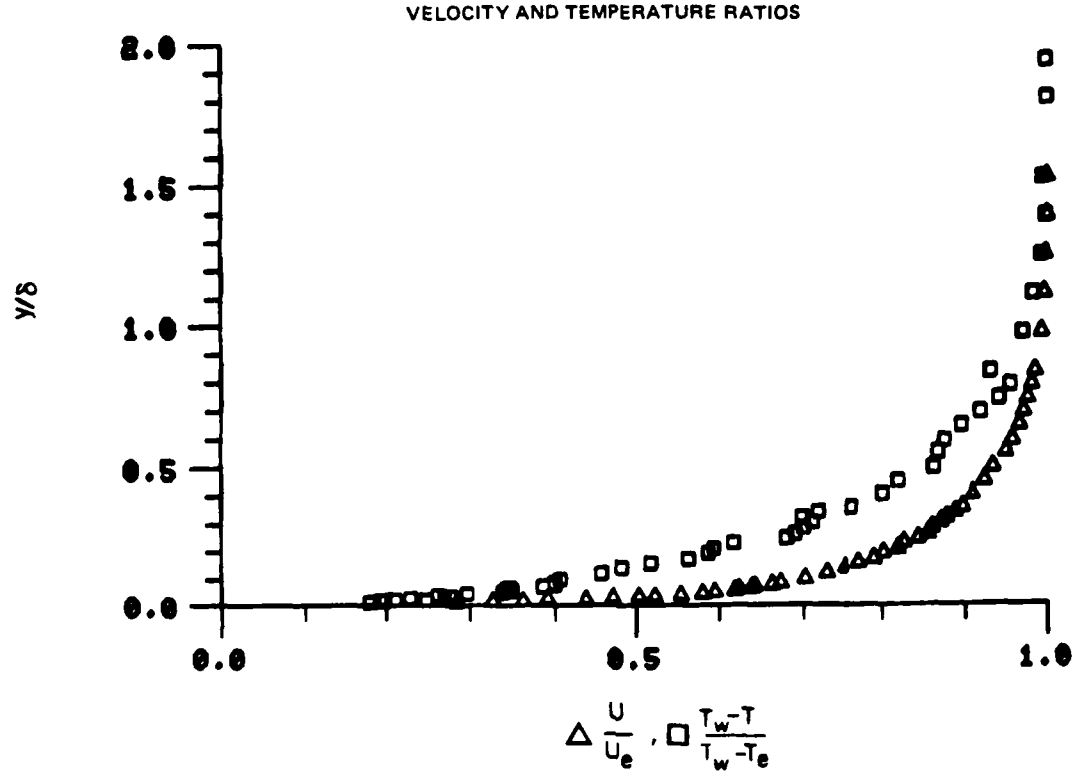


Figure 17. Boundary Layer Velocity Profiles
Run No. 2 Point No. 6

78-12-100-2



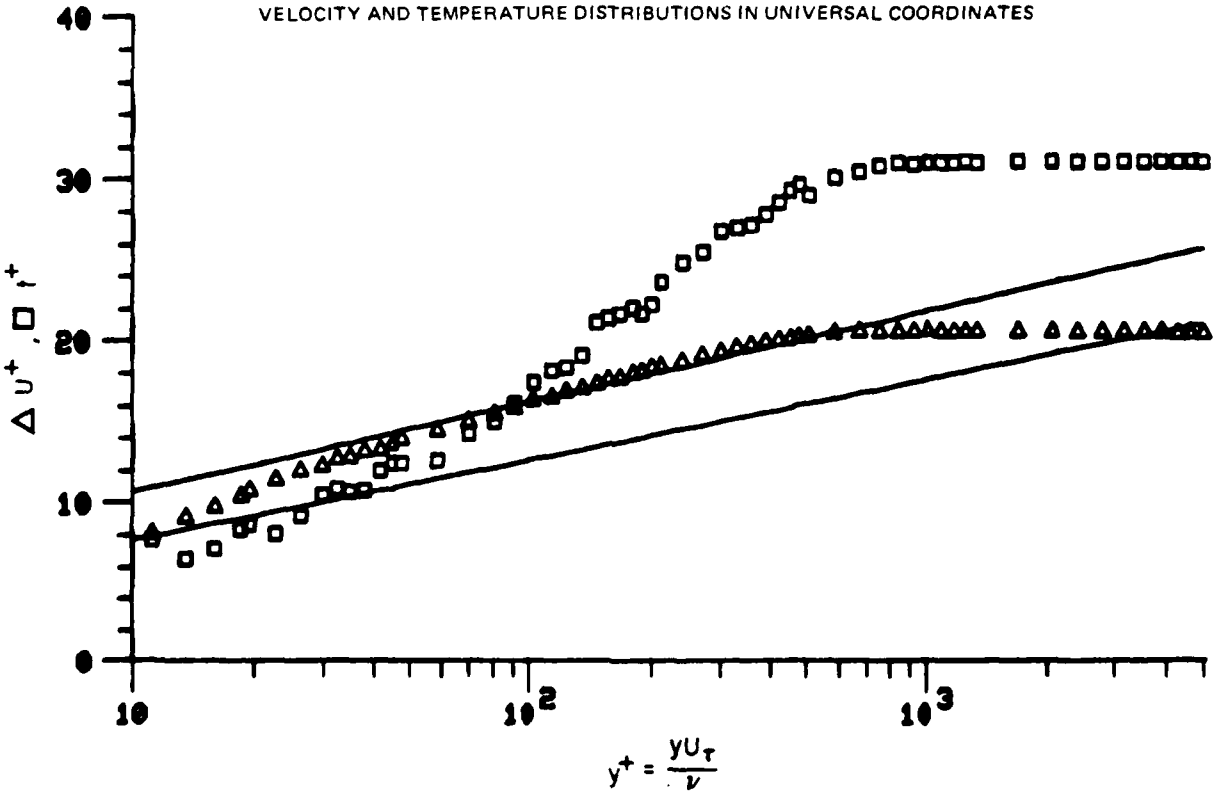
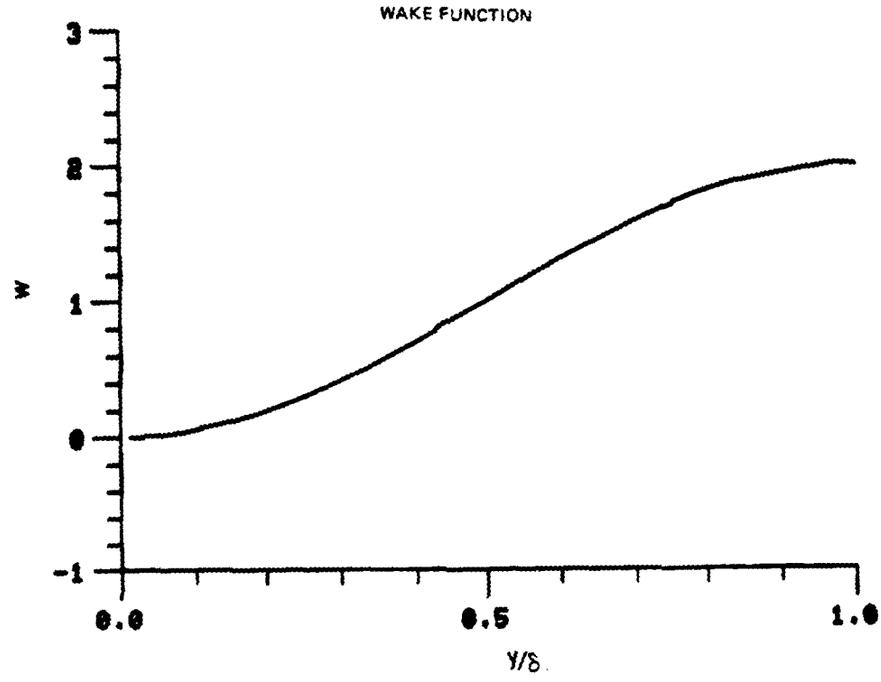


Figure 18. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.7

78-12-100-1



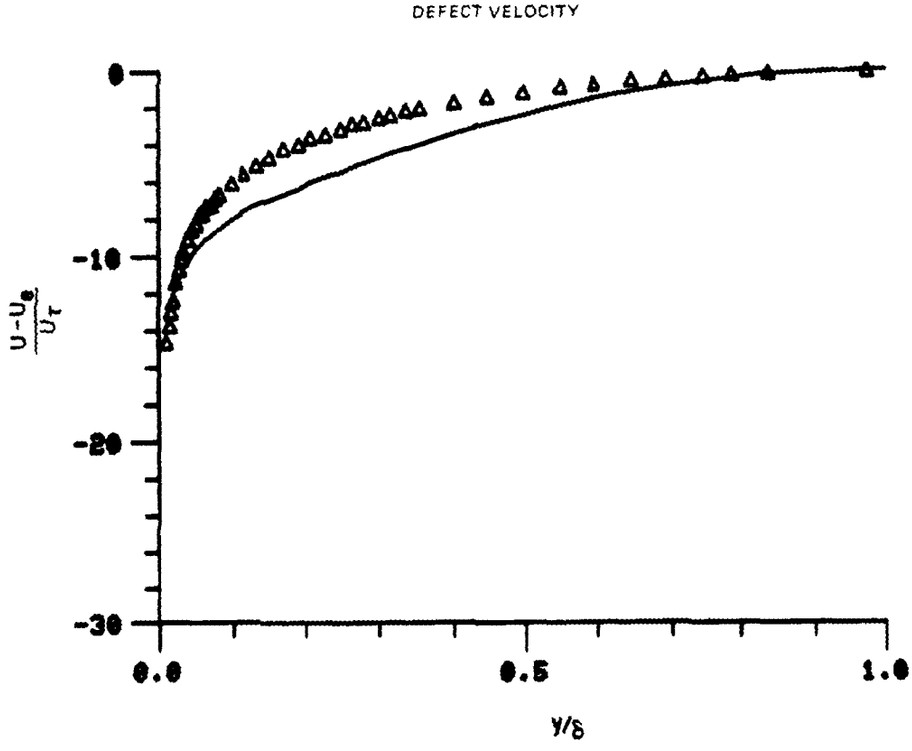
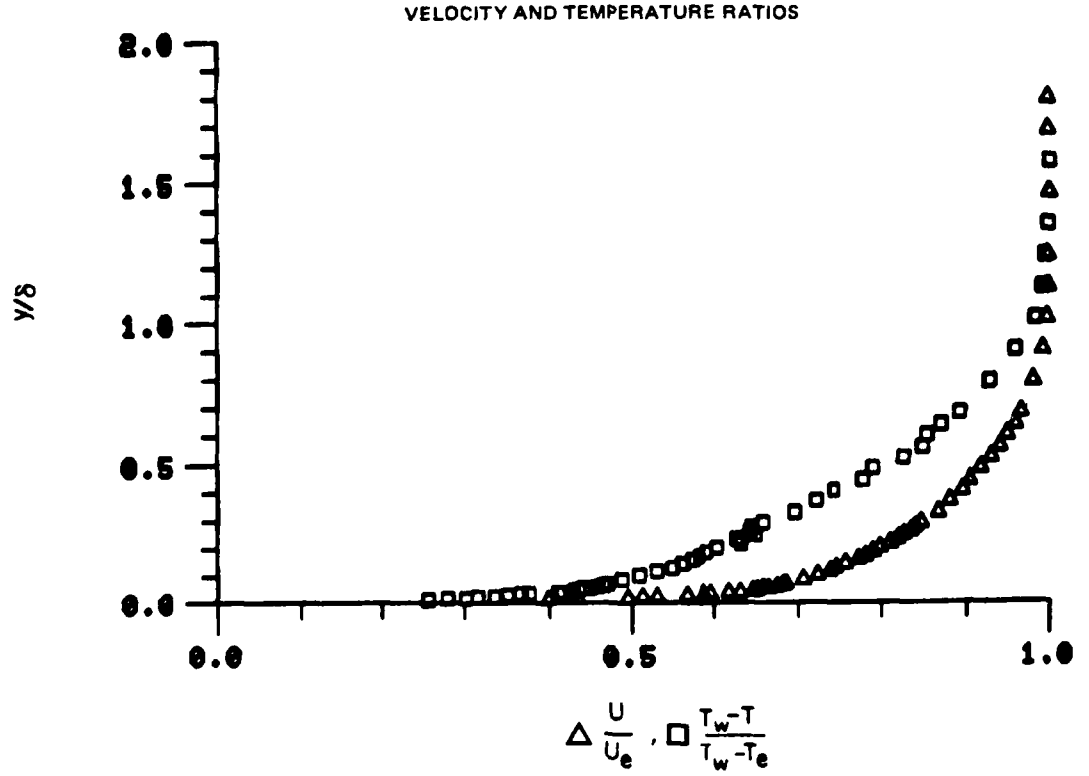


Figure 18. Boundary Layer Velocity Profiles
Run No.2 Point No. 7

78-12-100-2



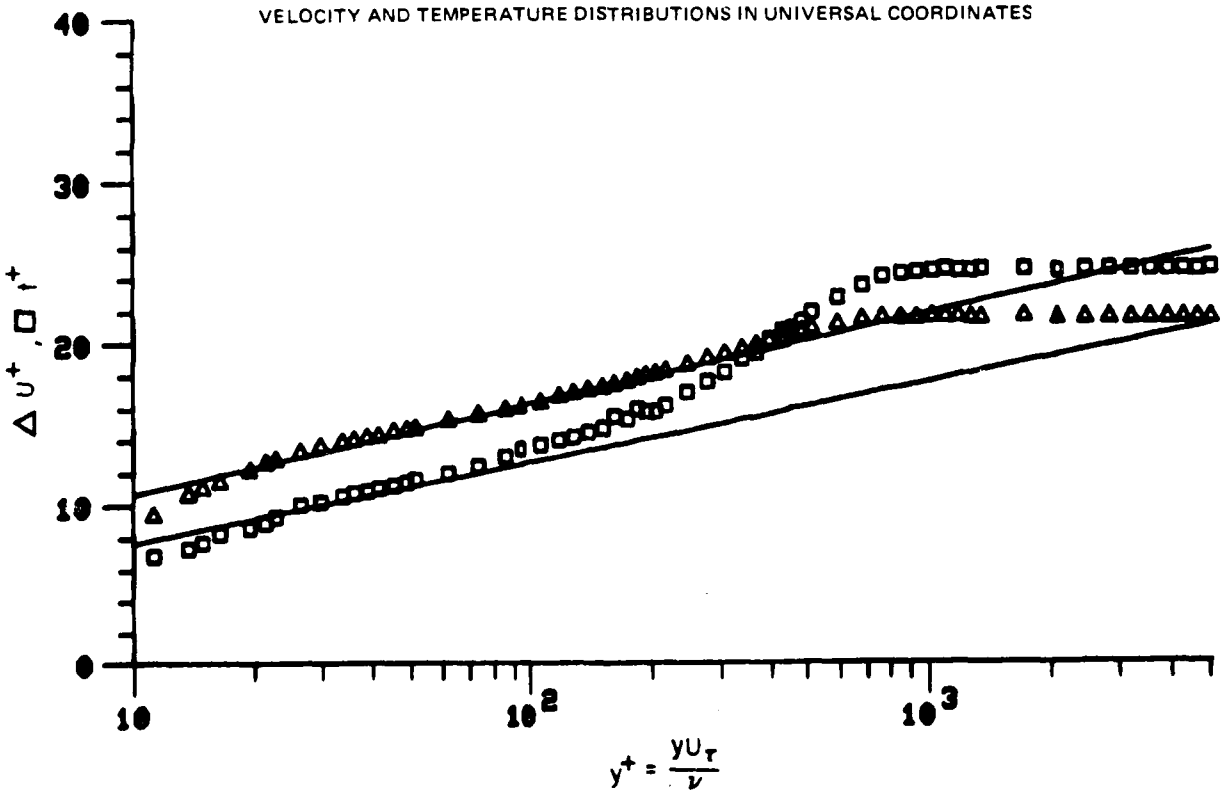
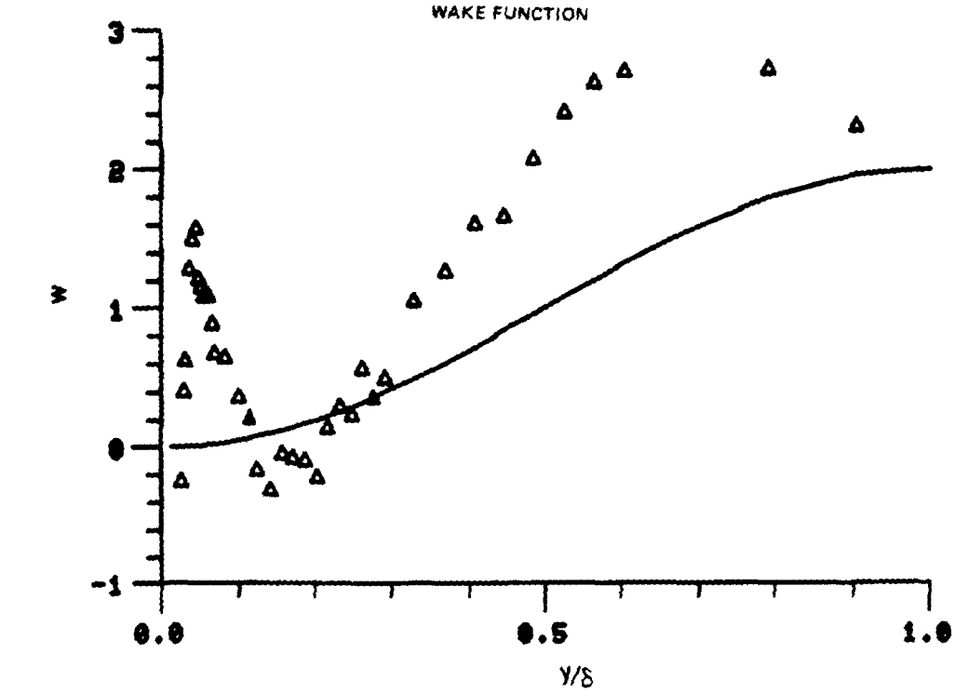


Figure 19. Boundary Layer Velocity and Temperature Profiles
Run No.2 Point No.2

78-12-100-1



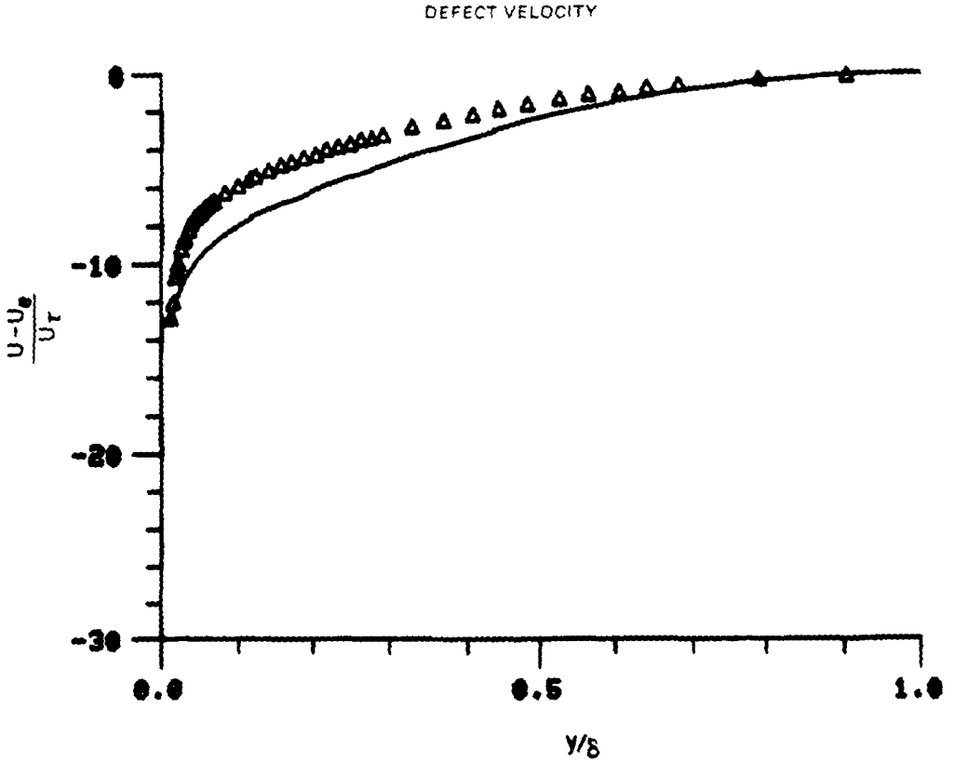
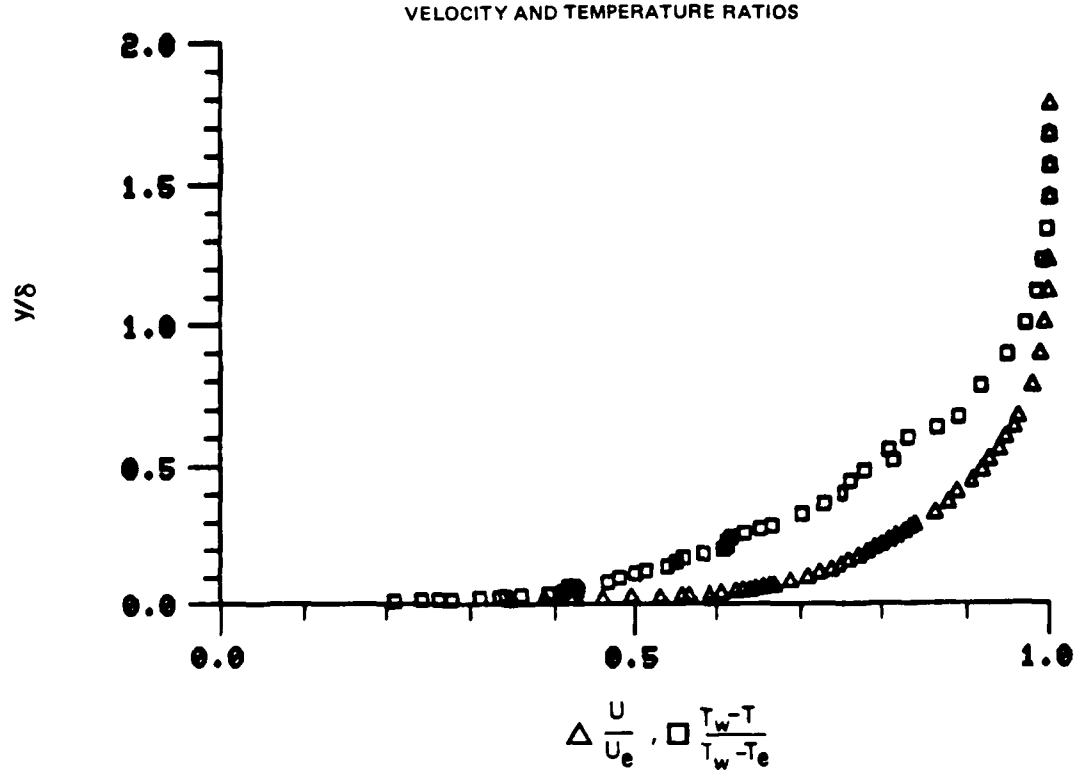


Figure 19. Boundary Layer Velocity Profiles
Run No.2 Point No.2

78-12-100-2



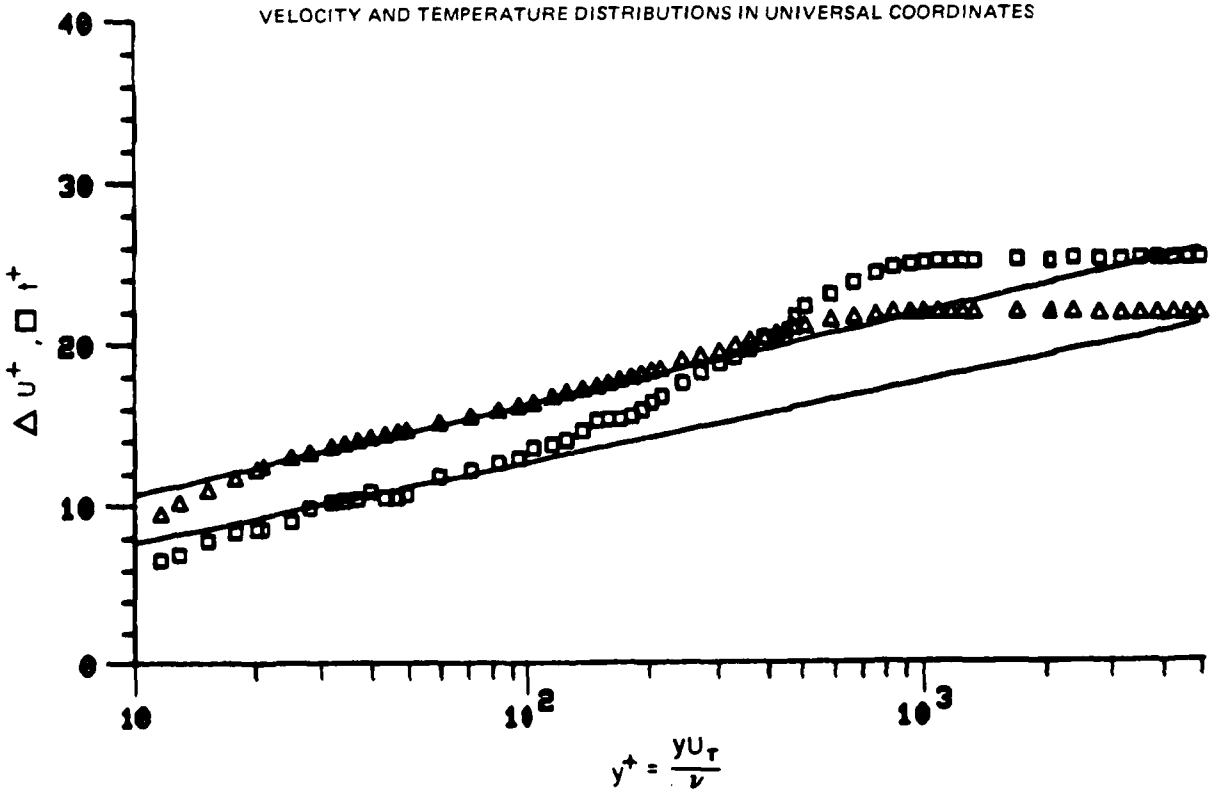


Figure 20. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 3

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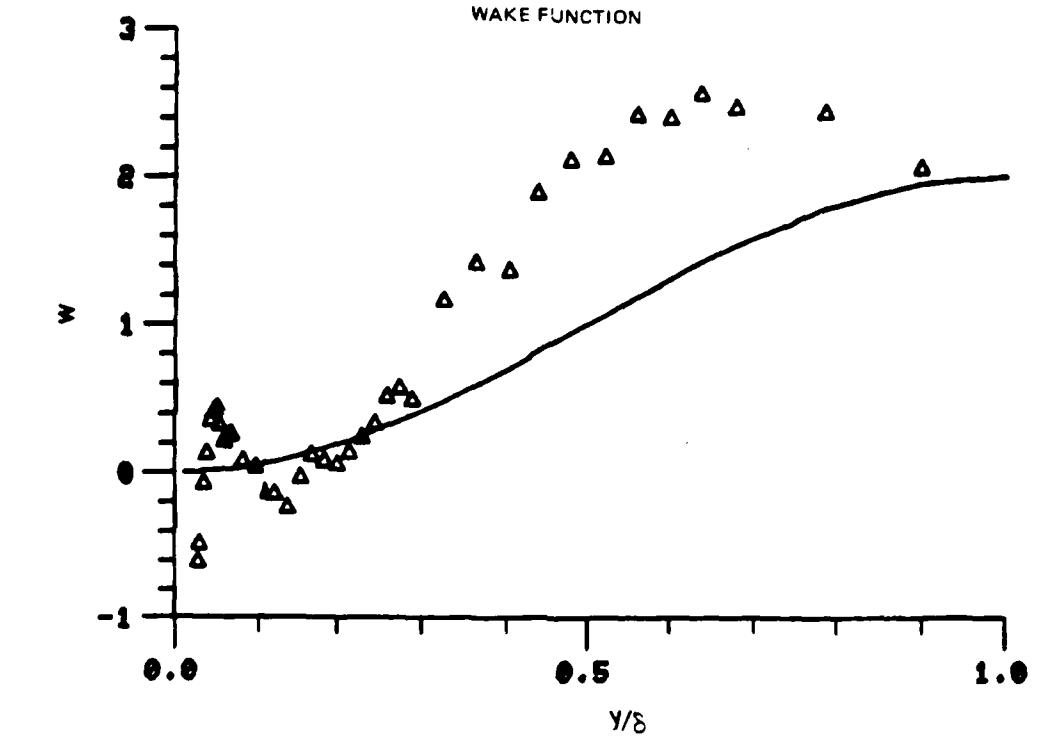

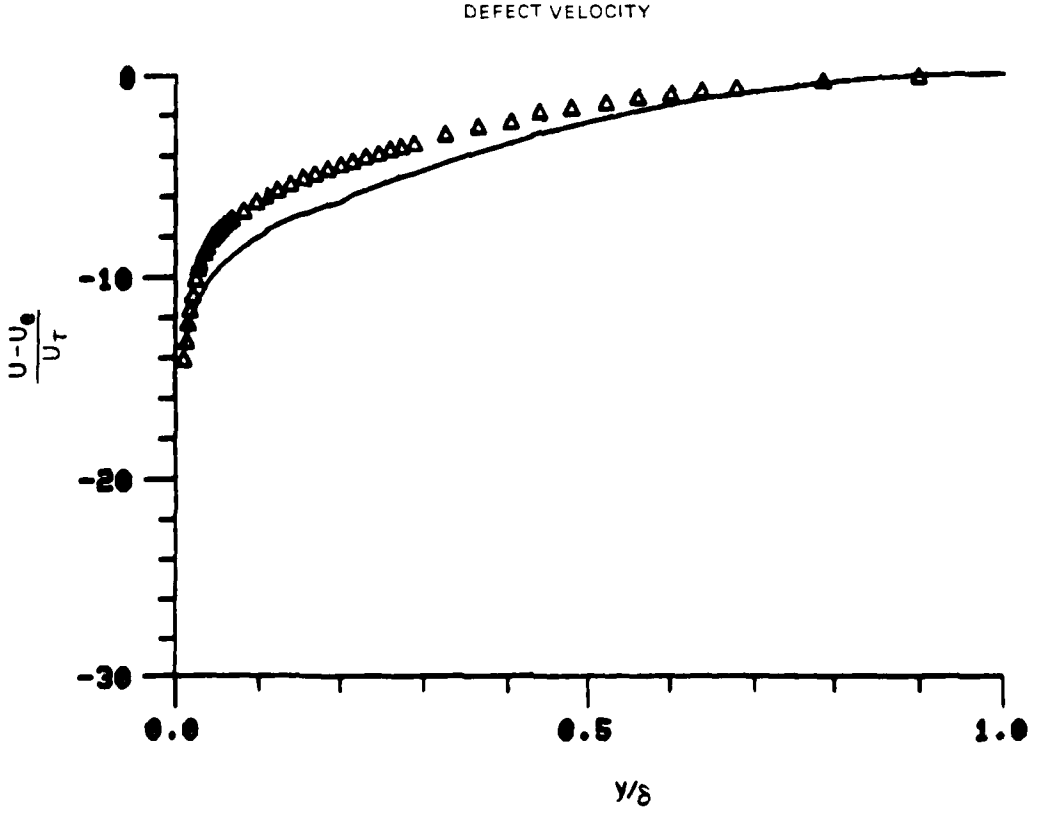

Figure 20. Boundary Layer Velocity Profiles
Run No. 2 Point No. 3

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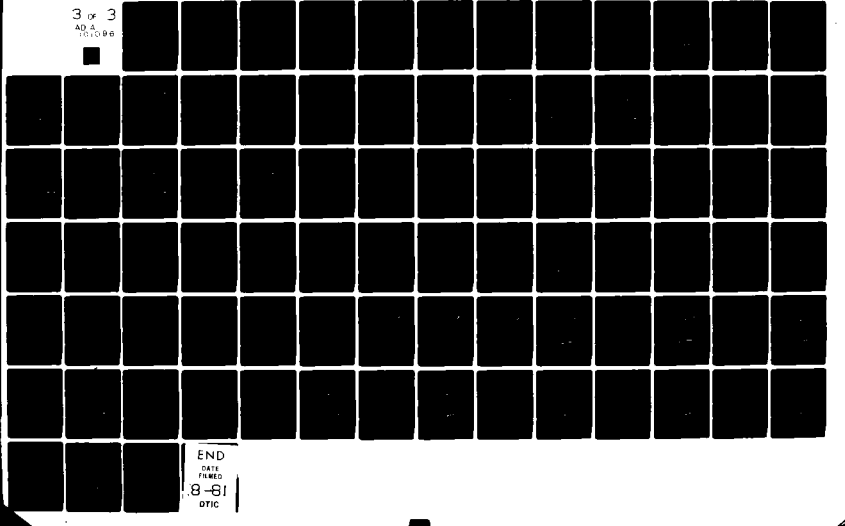

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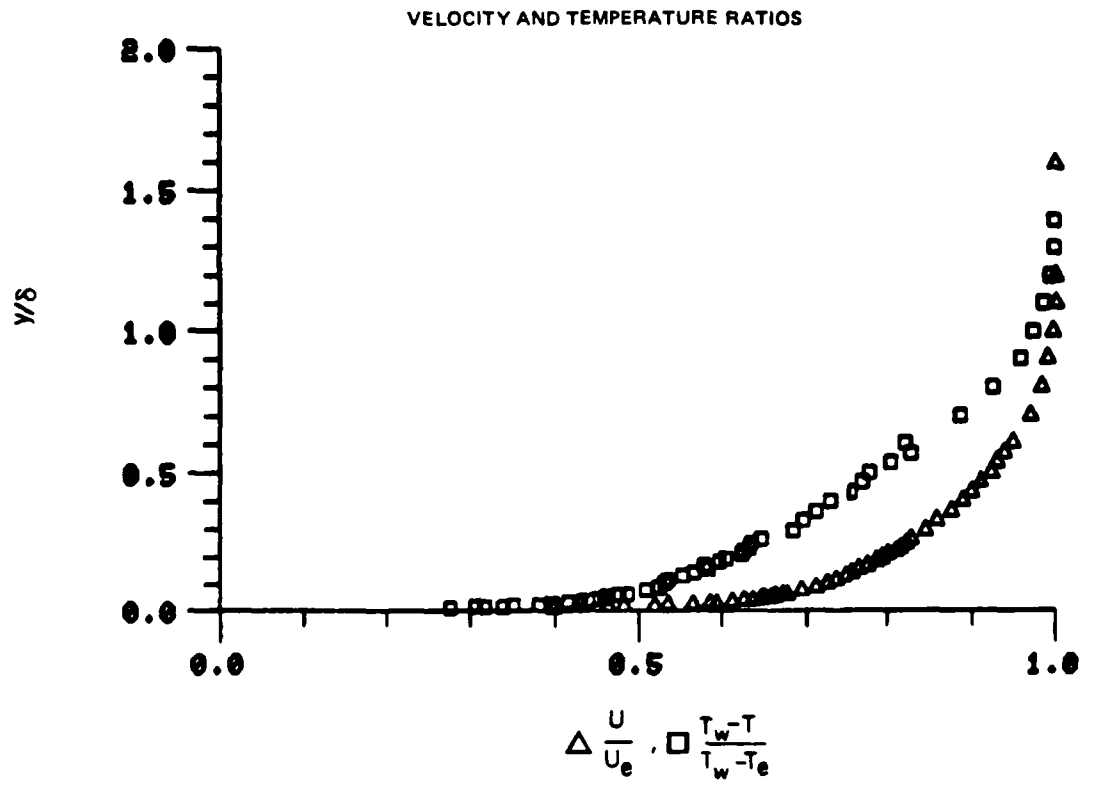


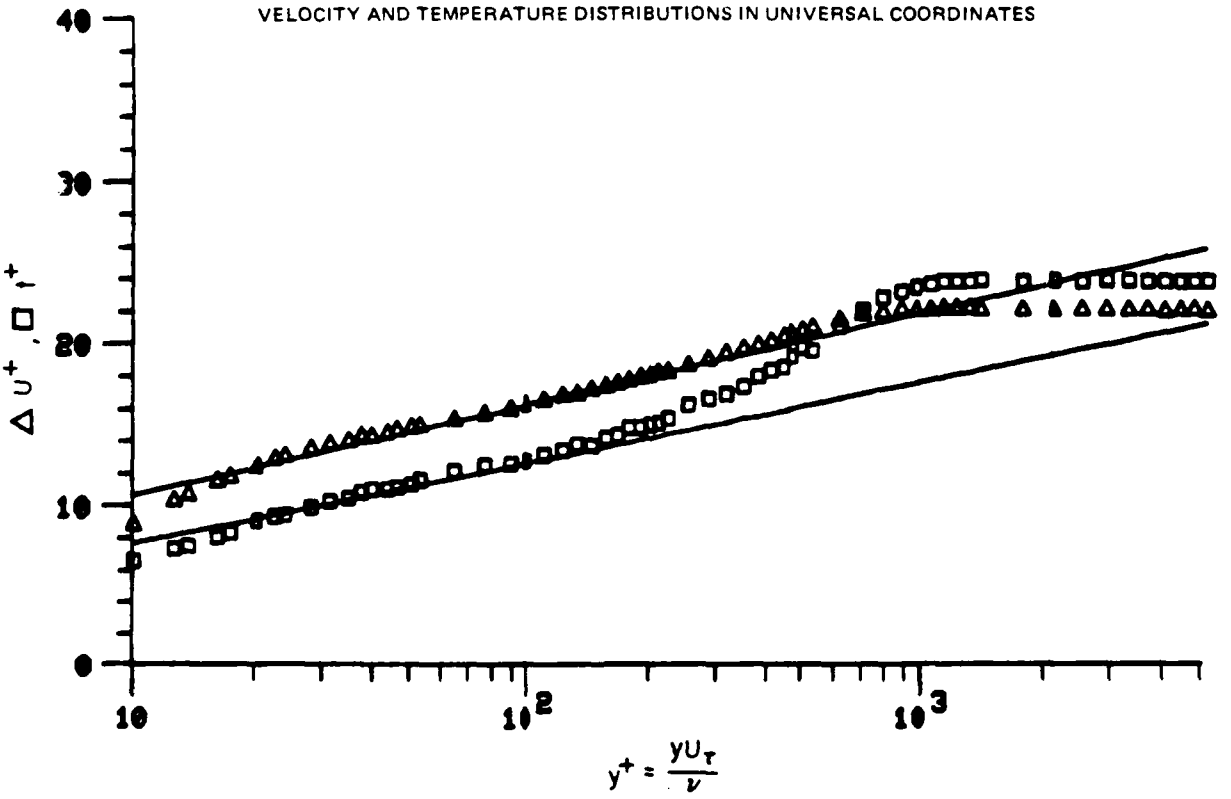


Figure 21. Boundary Layer Velocity and Temperature Profiles
Run No. 2 Point No. 1

78-12-100-1

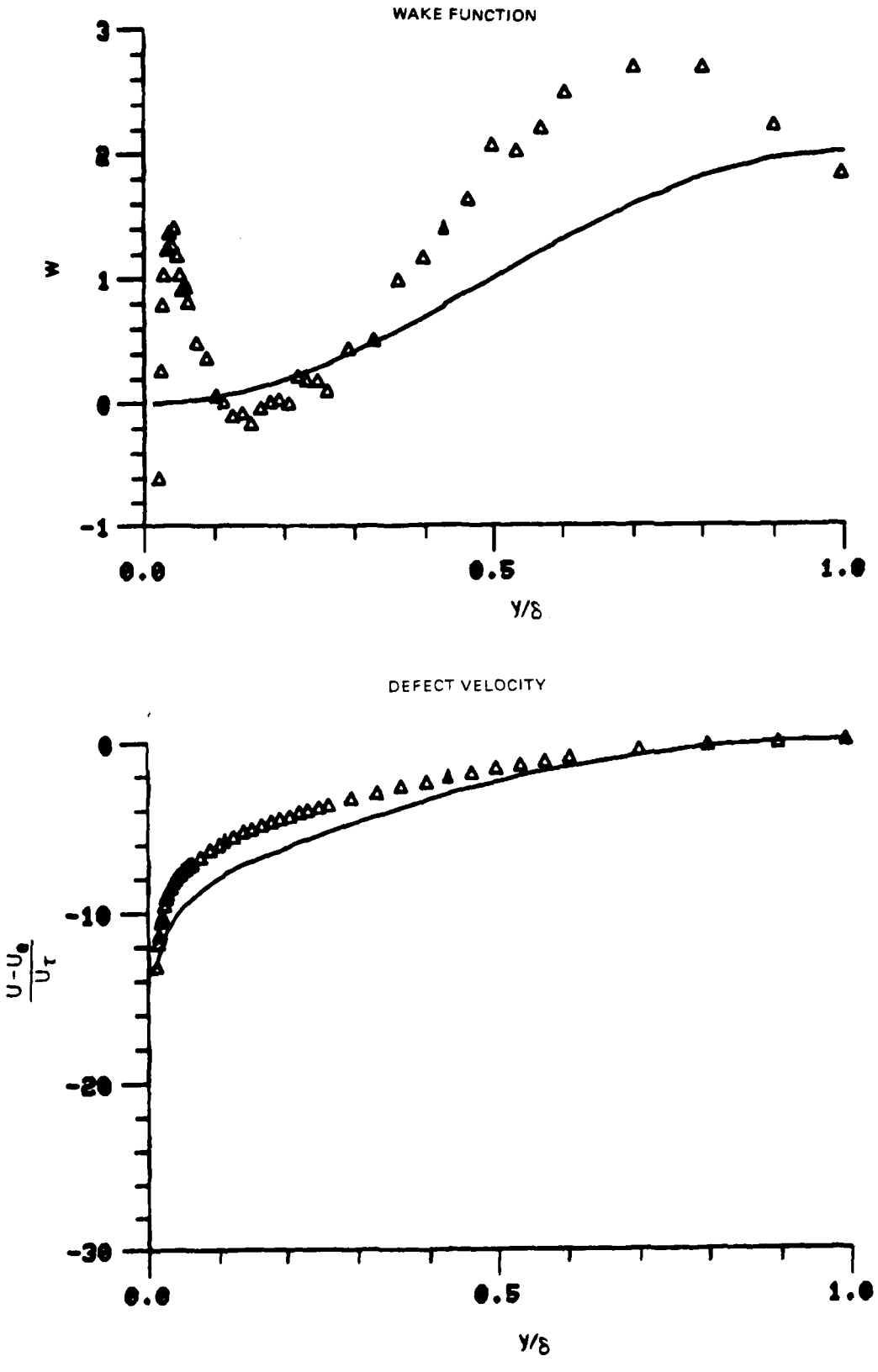


Figure 21. Boundary Layer Velocity Profiles
Run No.2 Point No.1

78-12-100-2

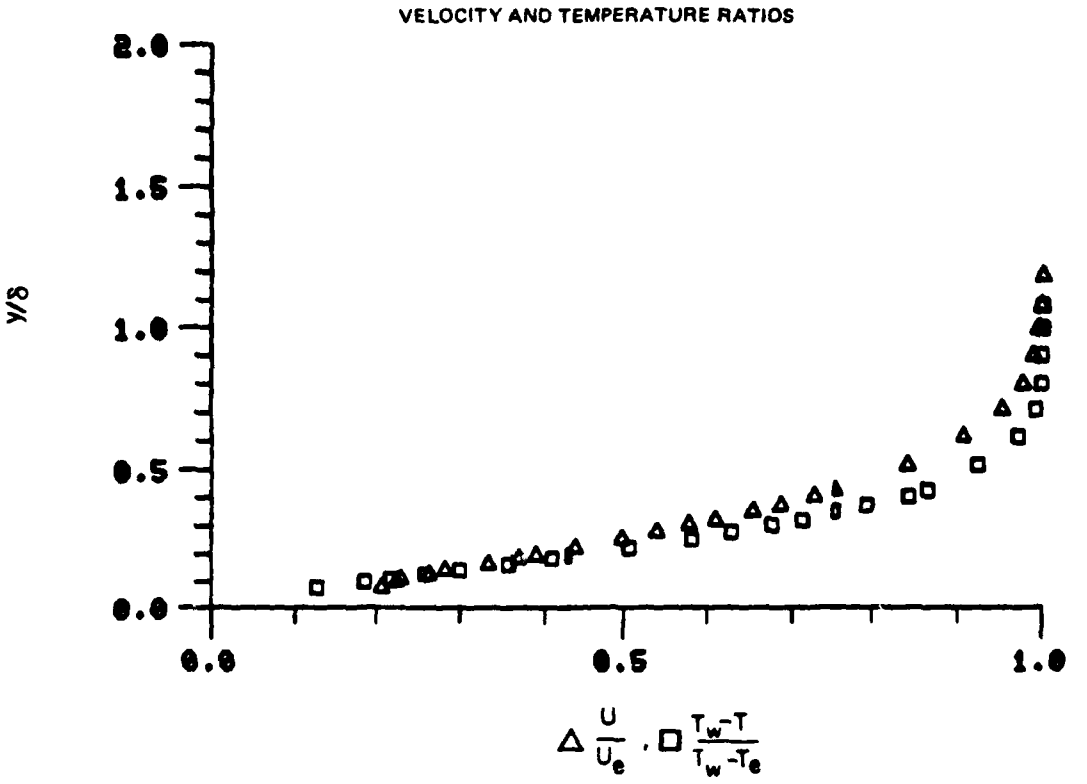


Figure 22. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.26

78-12-100-1

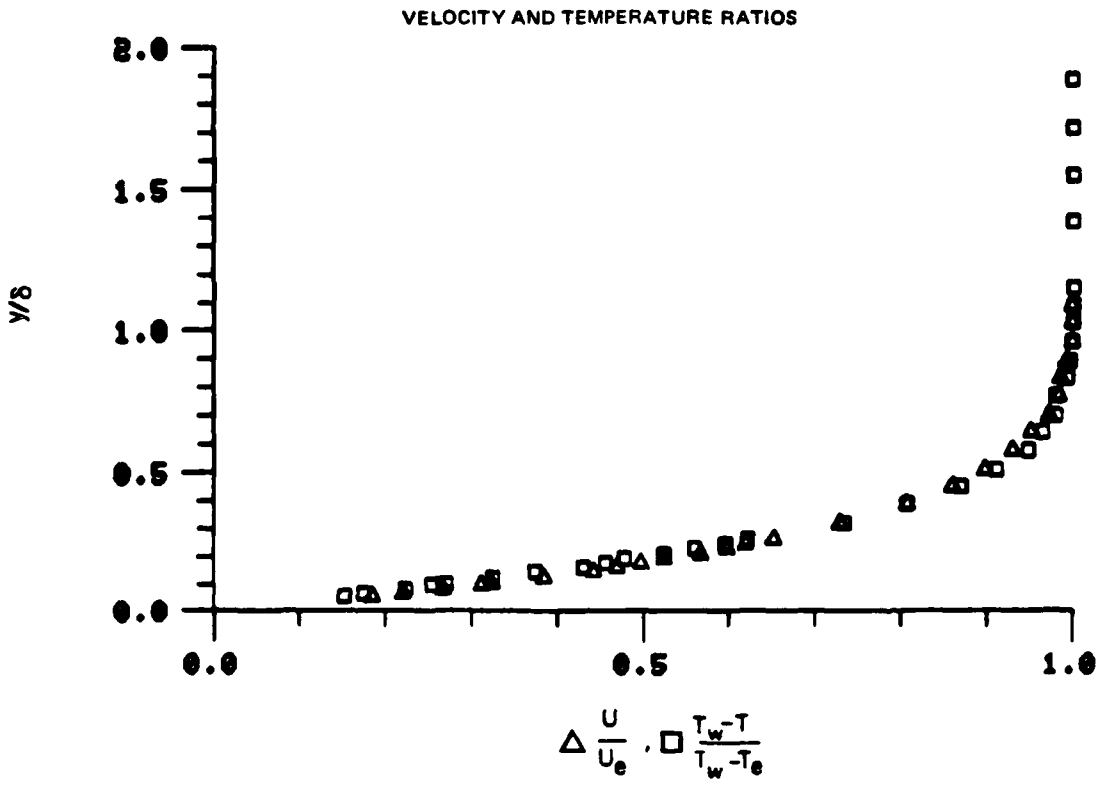


Figure 23. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.25

78-12-100-1

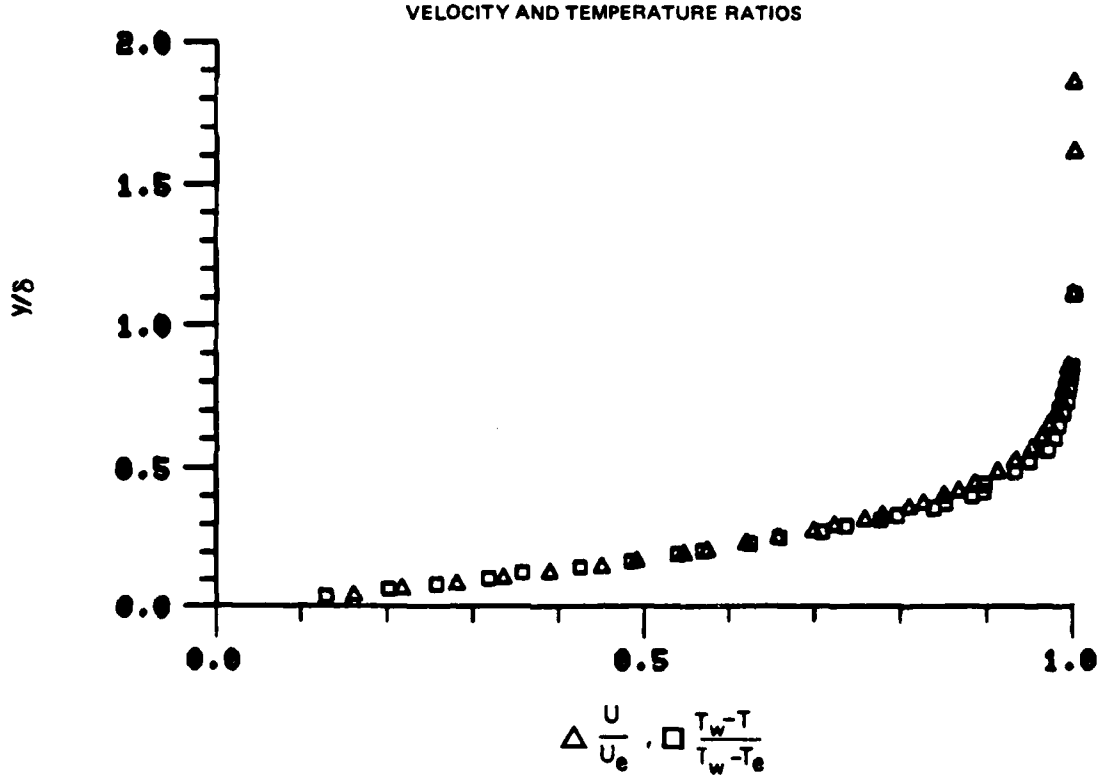


Figure 24. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No. 7

78-12-100-1

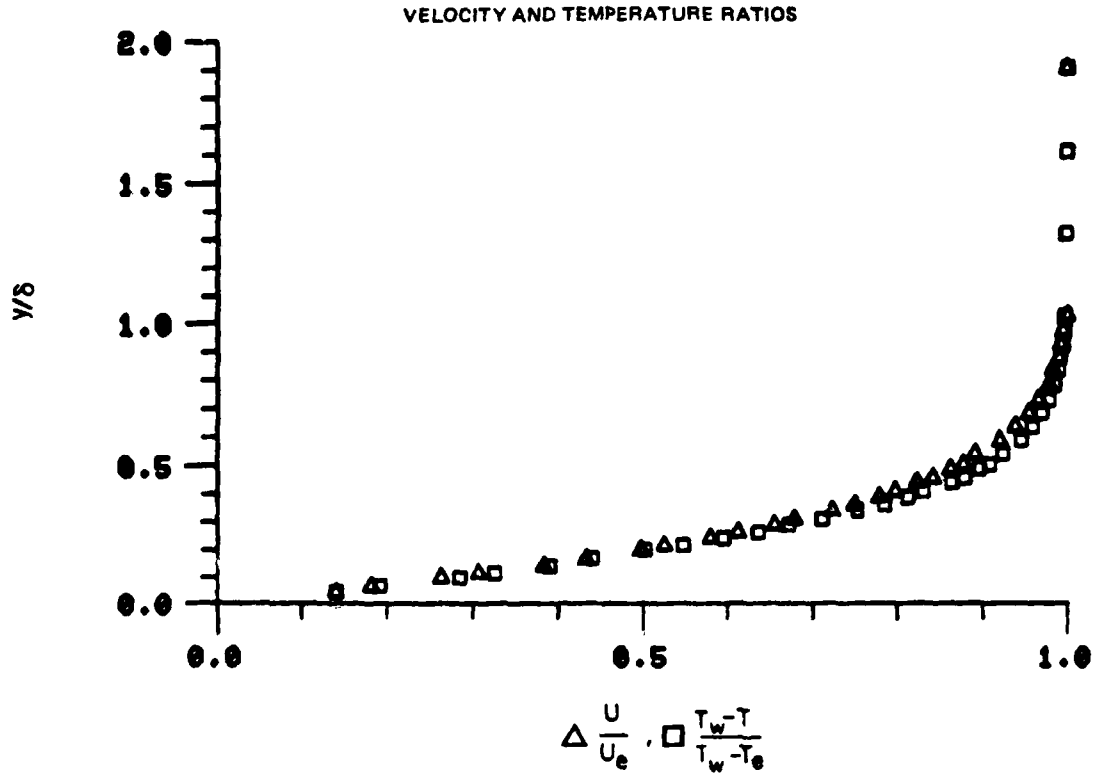


Figure 25. Boundary Layer Velocity and Temperature Profiles
Run No. 1 Point No. 5

78-12-100-1

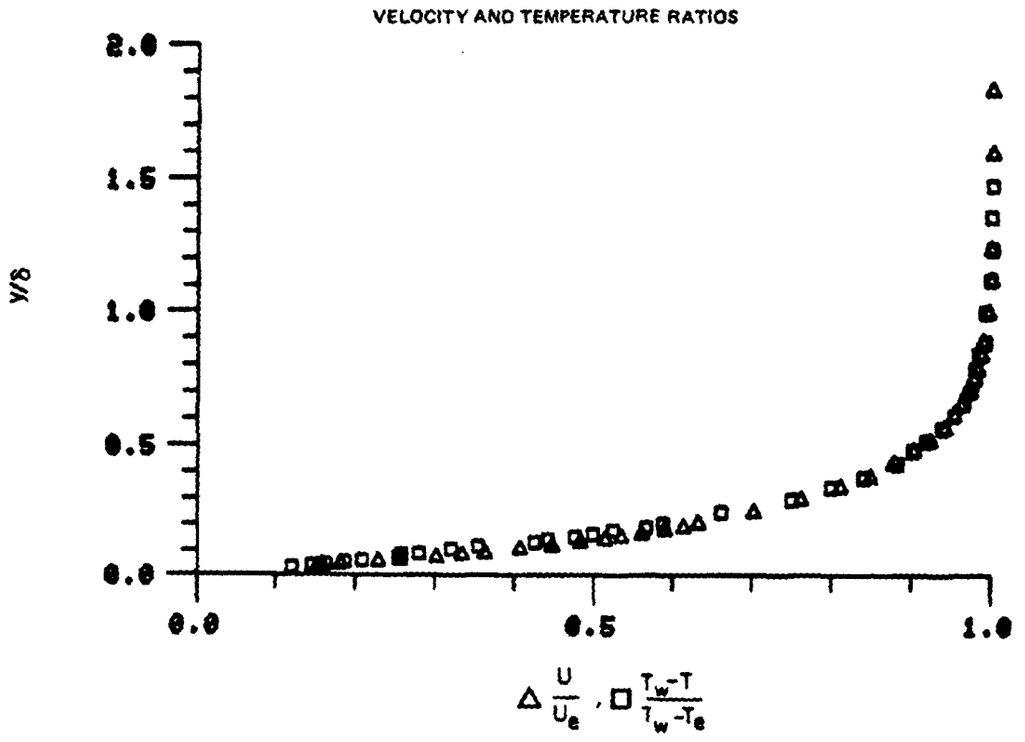


Figure 26. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.24

78-12-100-1

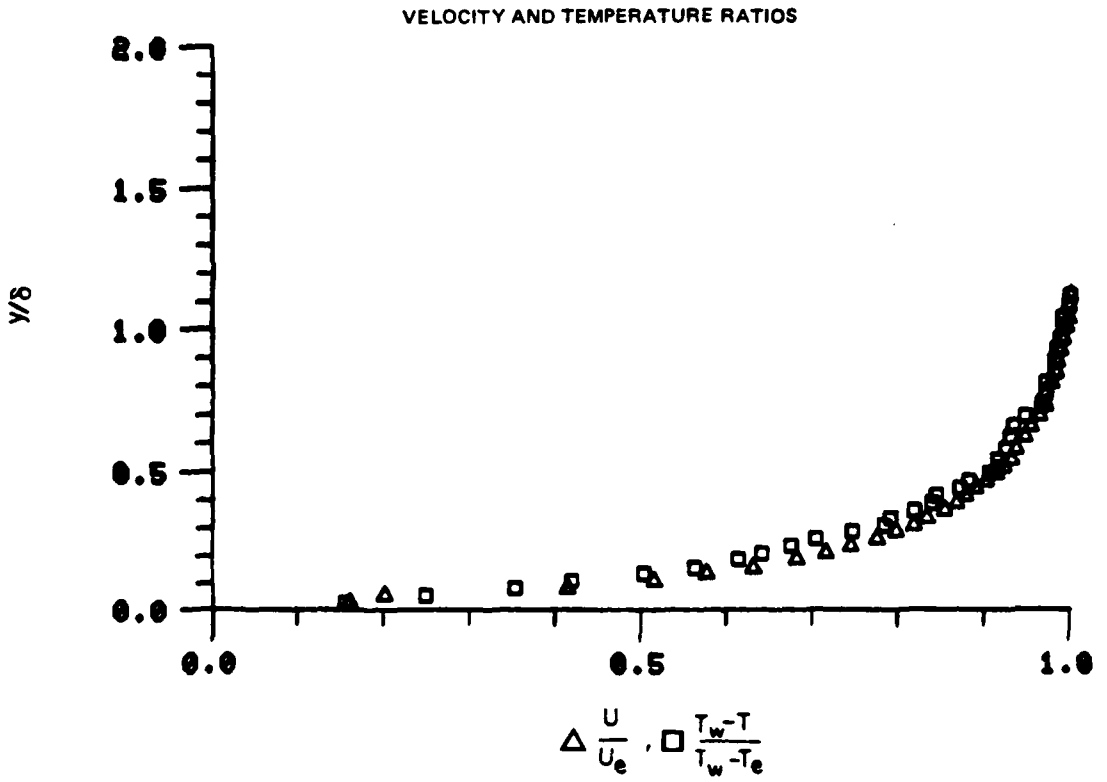


Figure 27. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No. 9

78-12-100-1

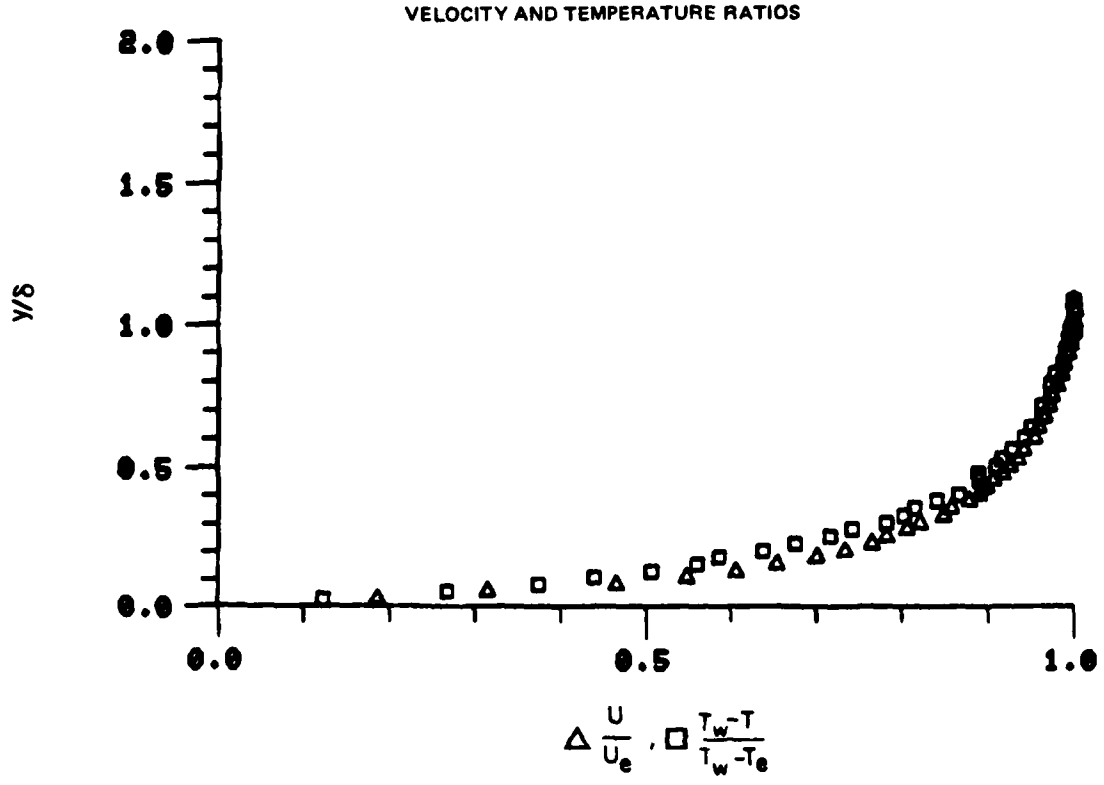
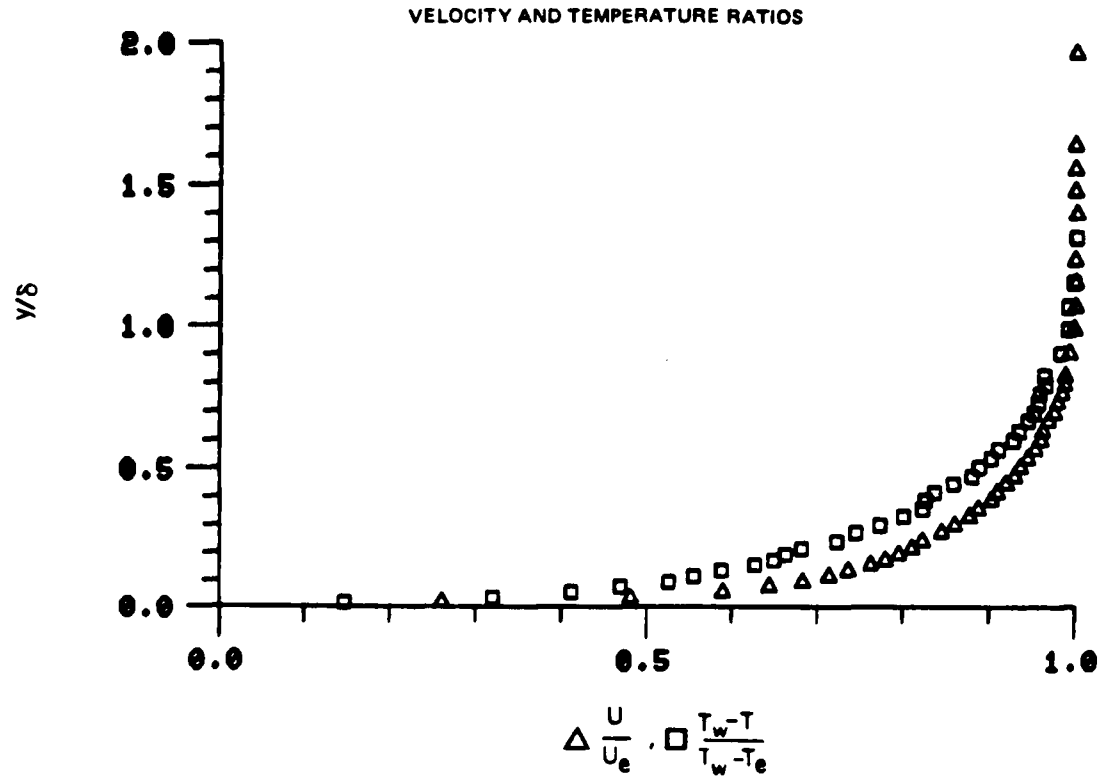


Figure 28. Boundary Layer Velocity and Temperature Profiles
Run No. 1 Point No. 10

78-12-100-1



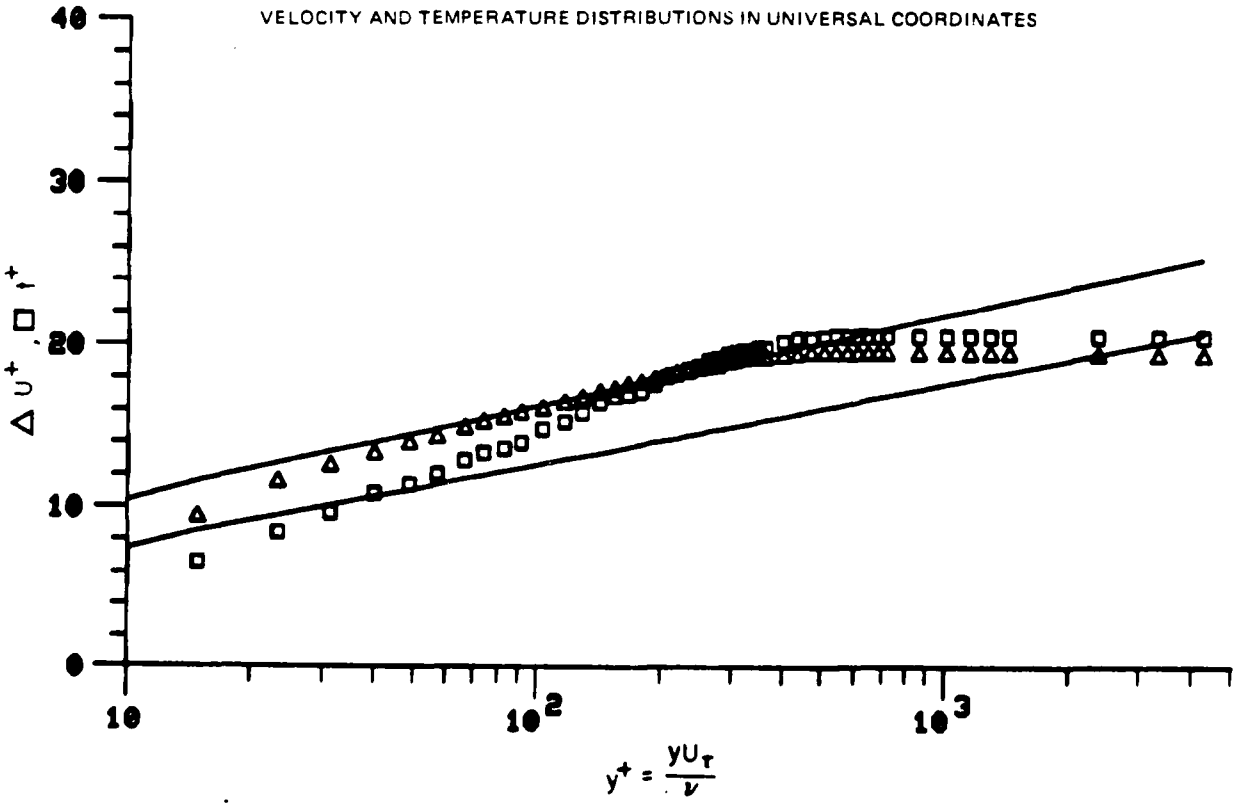


Figure 29. Boundary Layer Velocity and Temperature Profiles
Run No. 1 Point No. 11

78-12-100-1

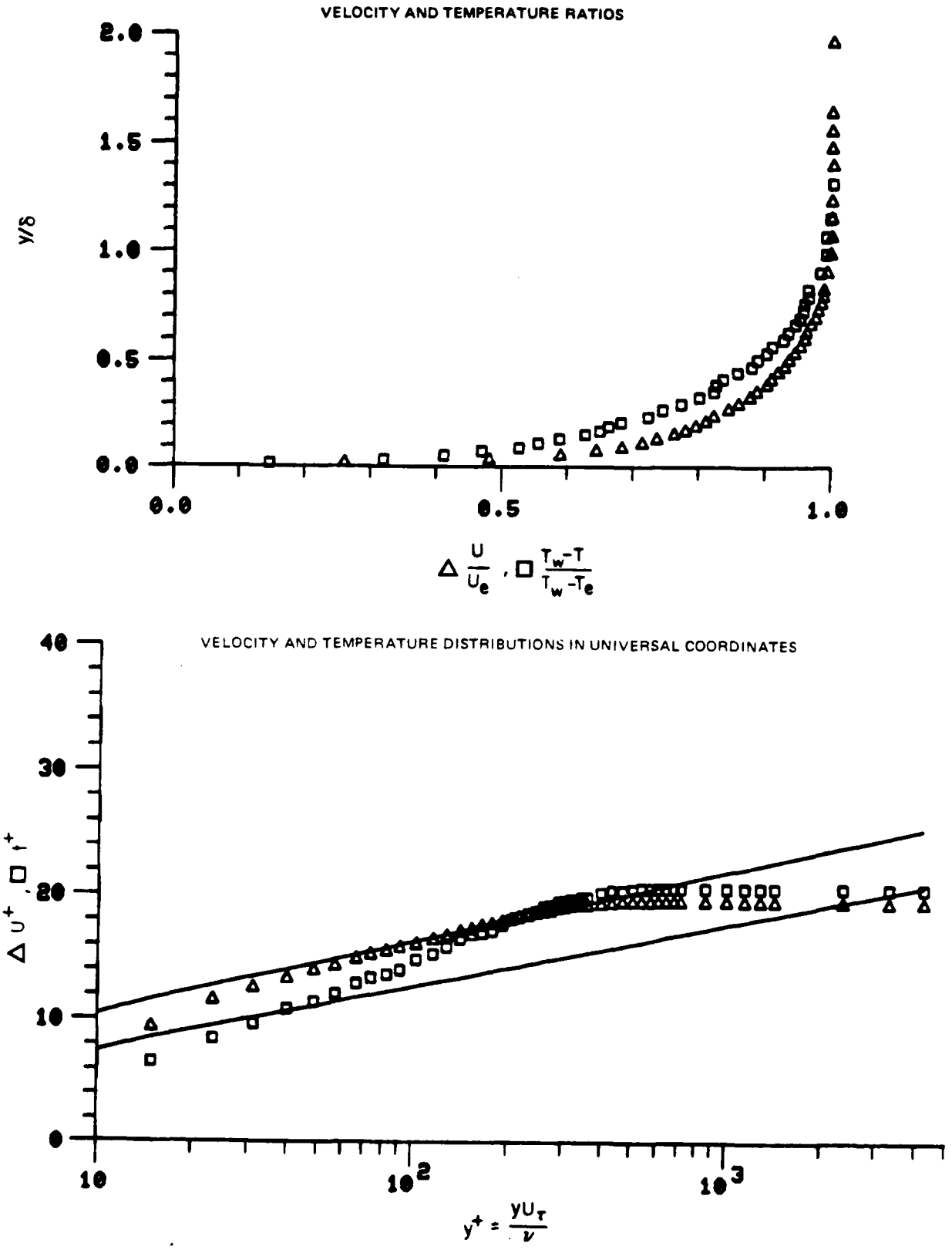
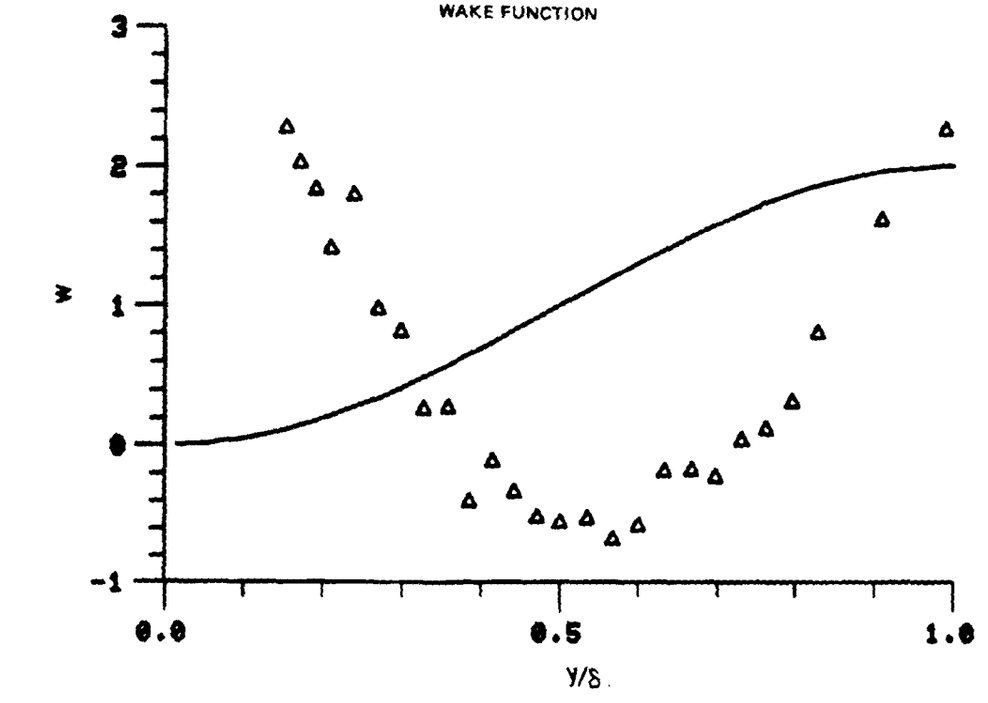


Figure 29. Boundary Layer Velocity and Temperature Profiles
Run No. 1 Point No. 11

78-12-100-1



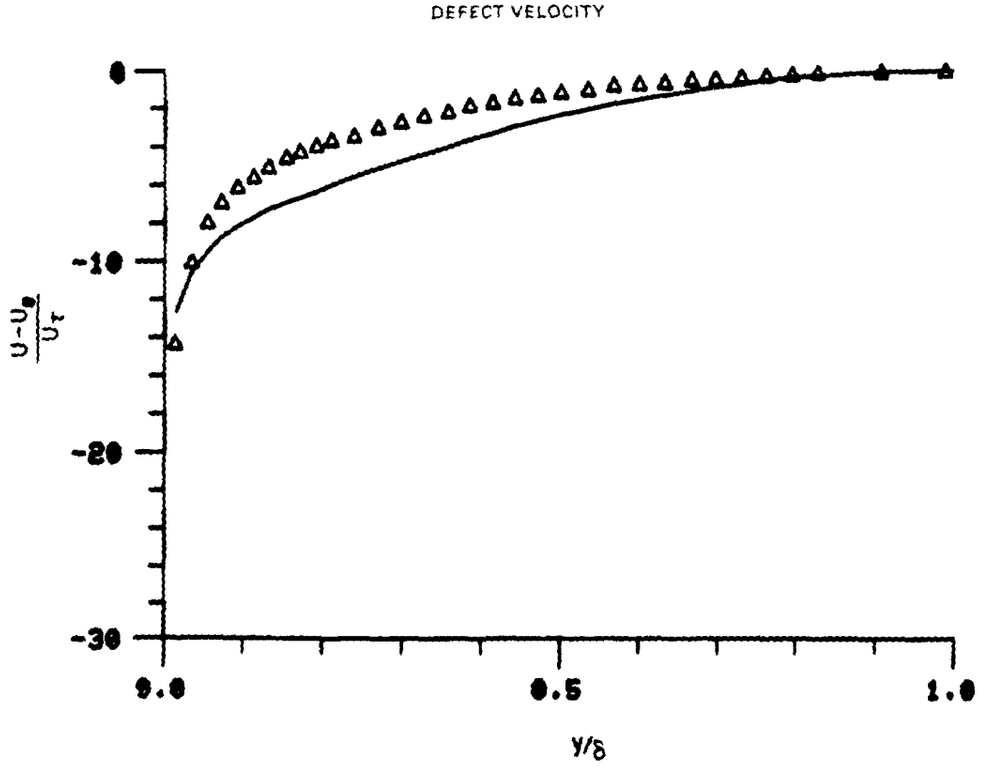
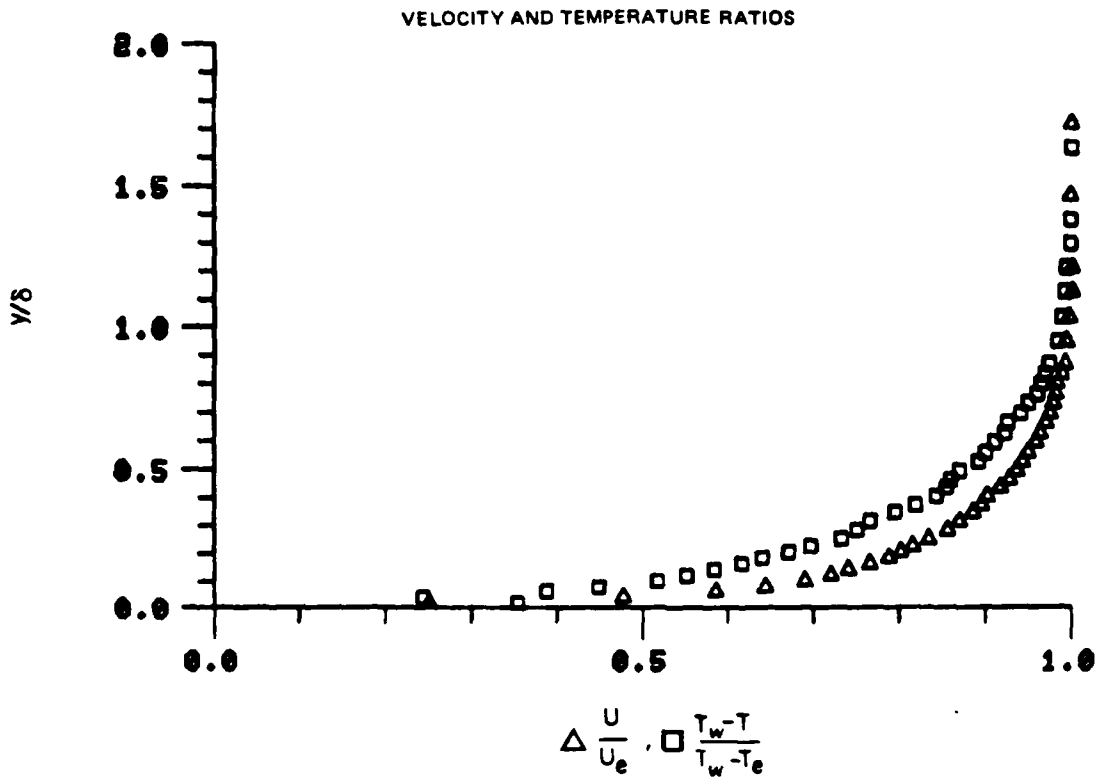


Figure 29. Boundary Layer Velocity Profiles
Run No. 1 Point No. 11

78-12-100-2



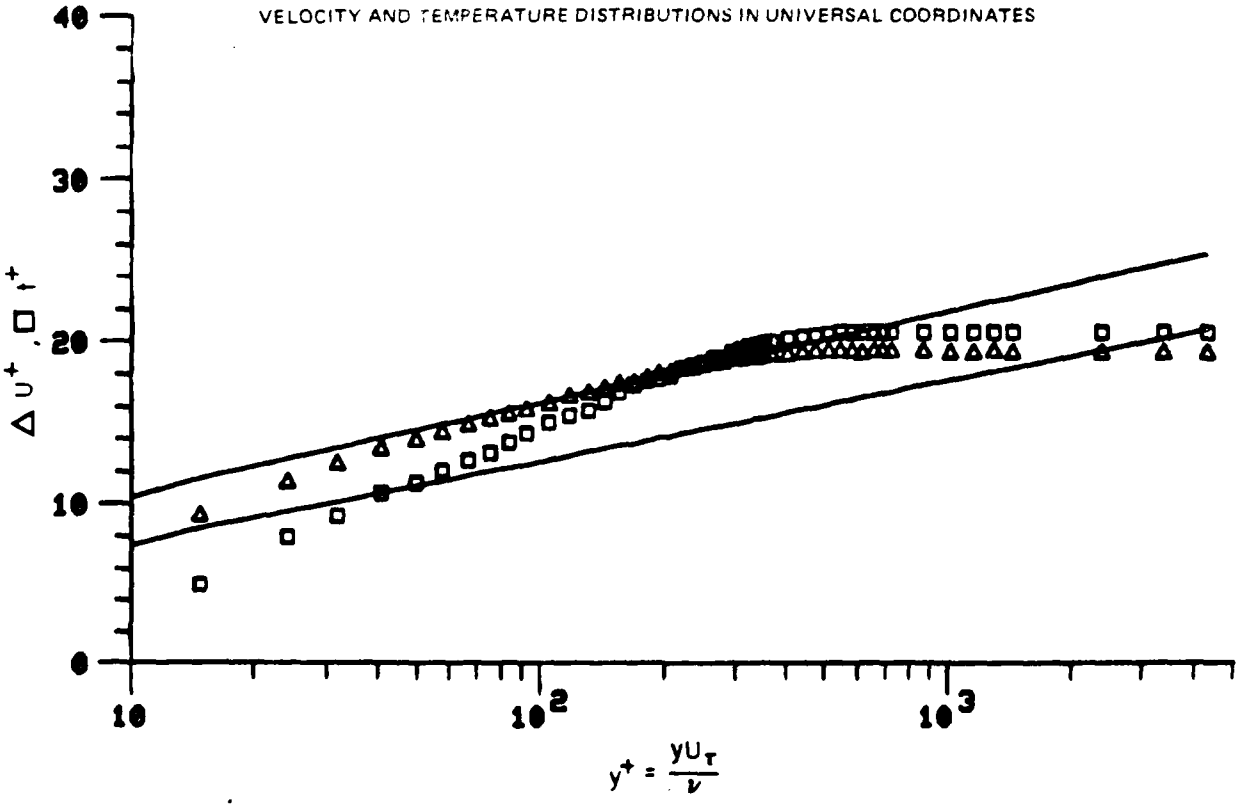
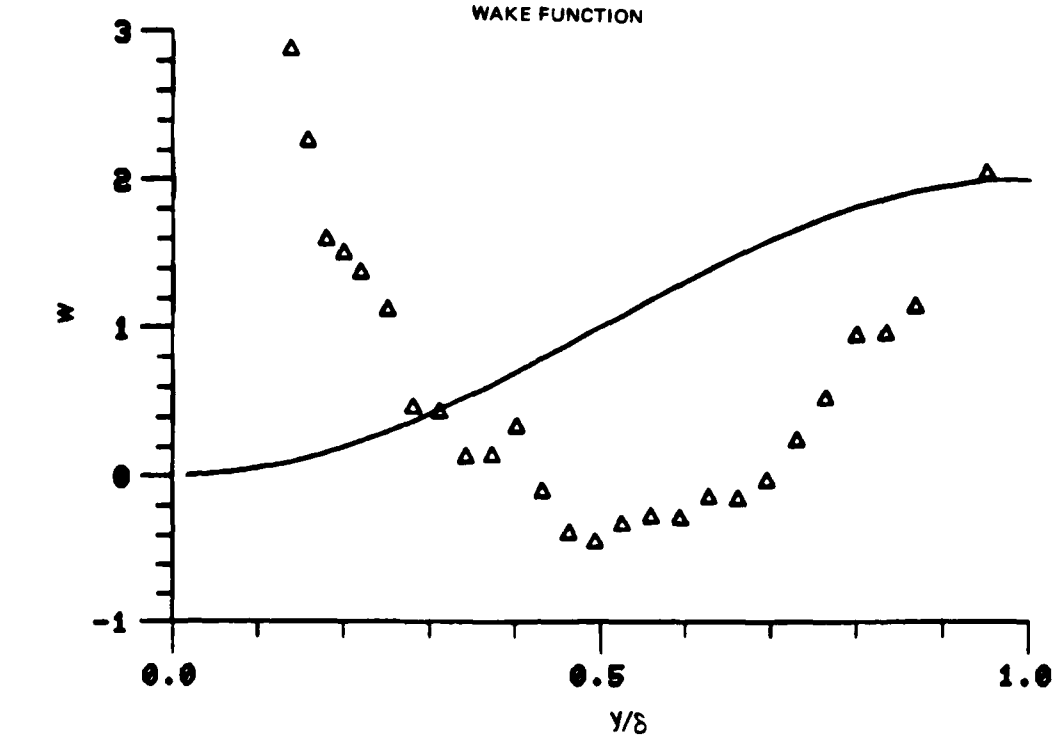


Figure 30. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No. 12

78-12-100-1



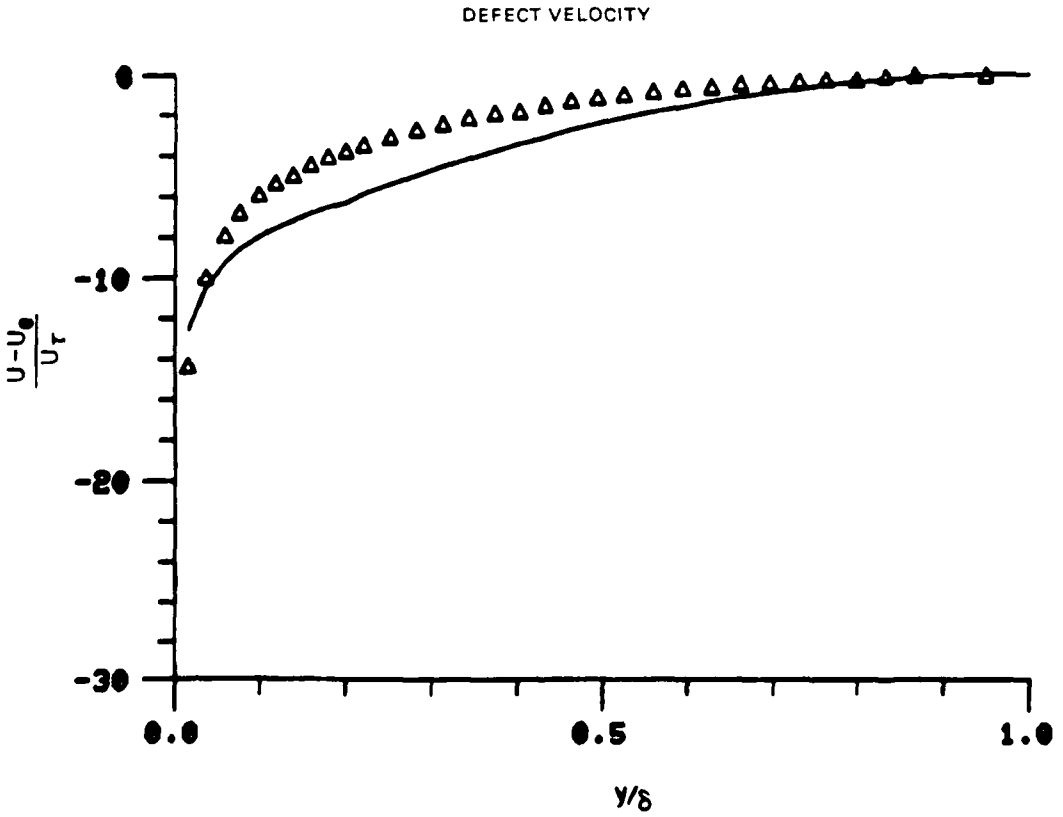
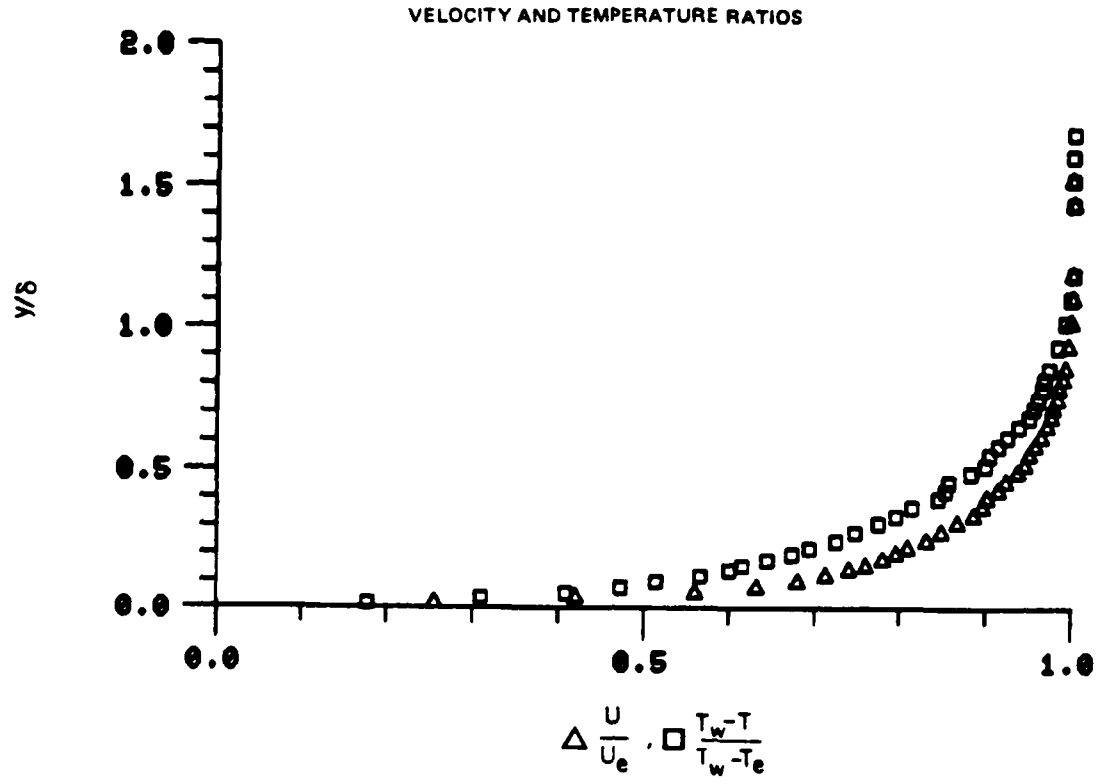


Figure 30. Boundary Layer Velocity Profiles
Run No. 1 Point No. 12

78-12-100-2



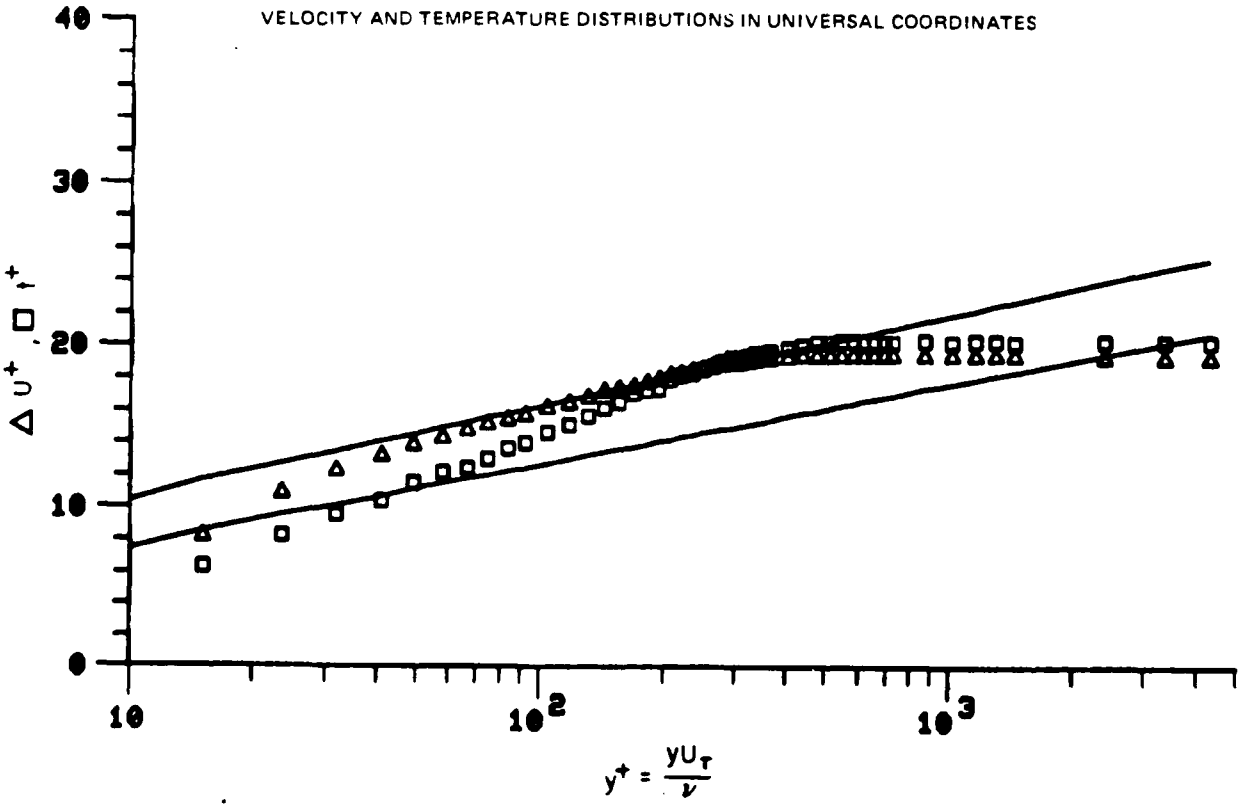
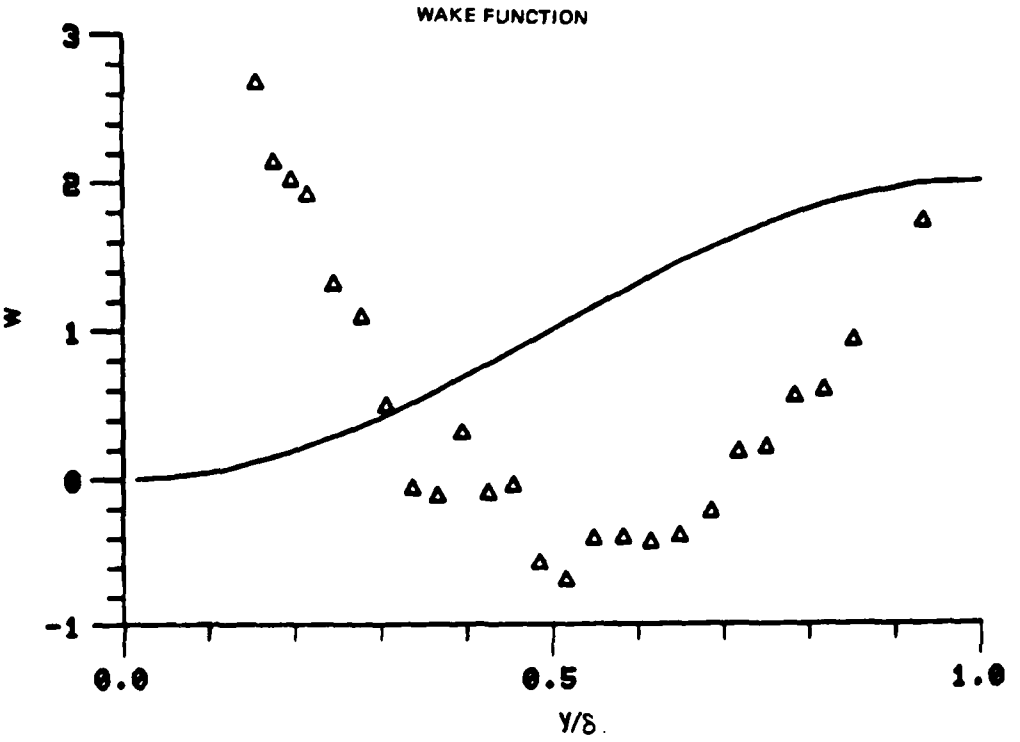


Figure 31. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.13

78-12-100-1



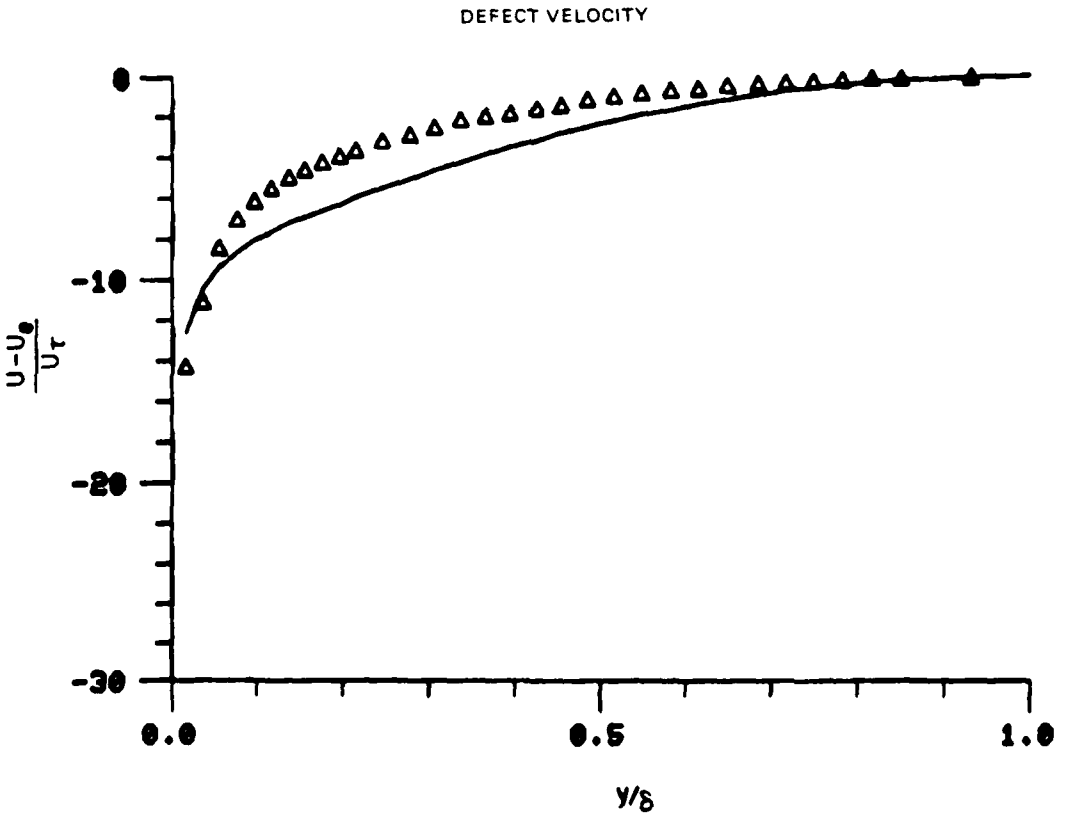
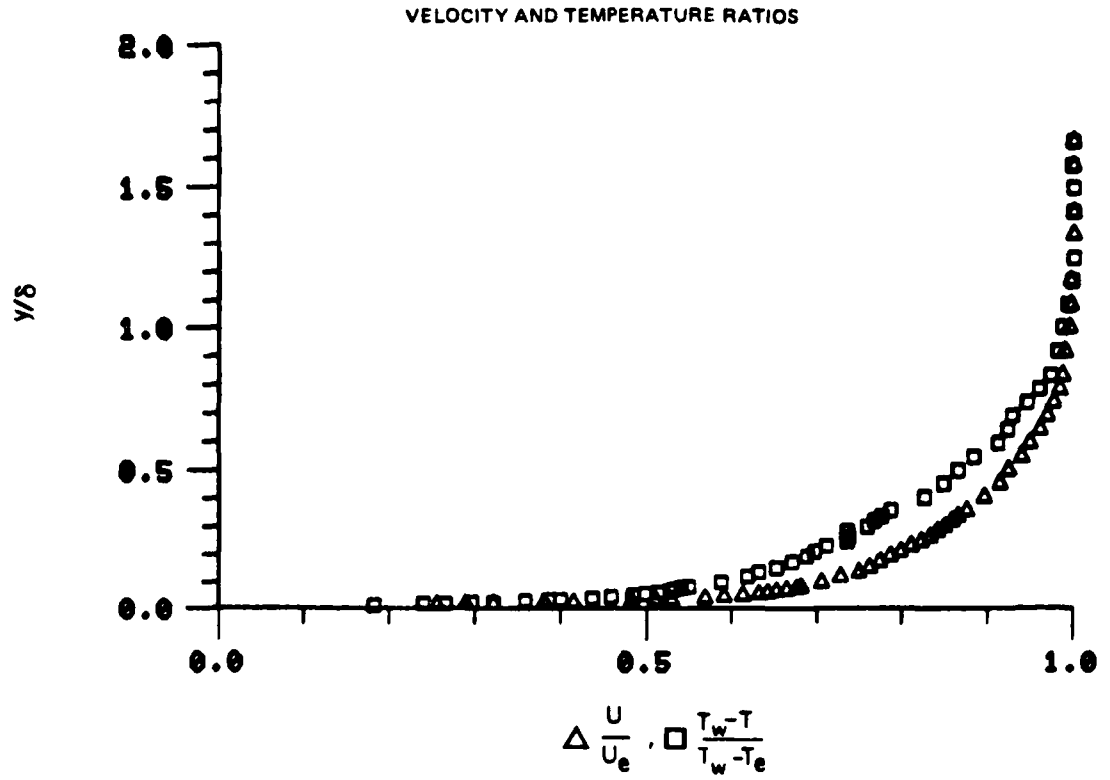


Figure 31. Boundary Layer Velocity Profiles
Run No. 1 Point No. 13

78-12-100-2



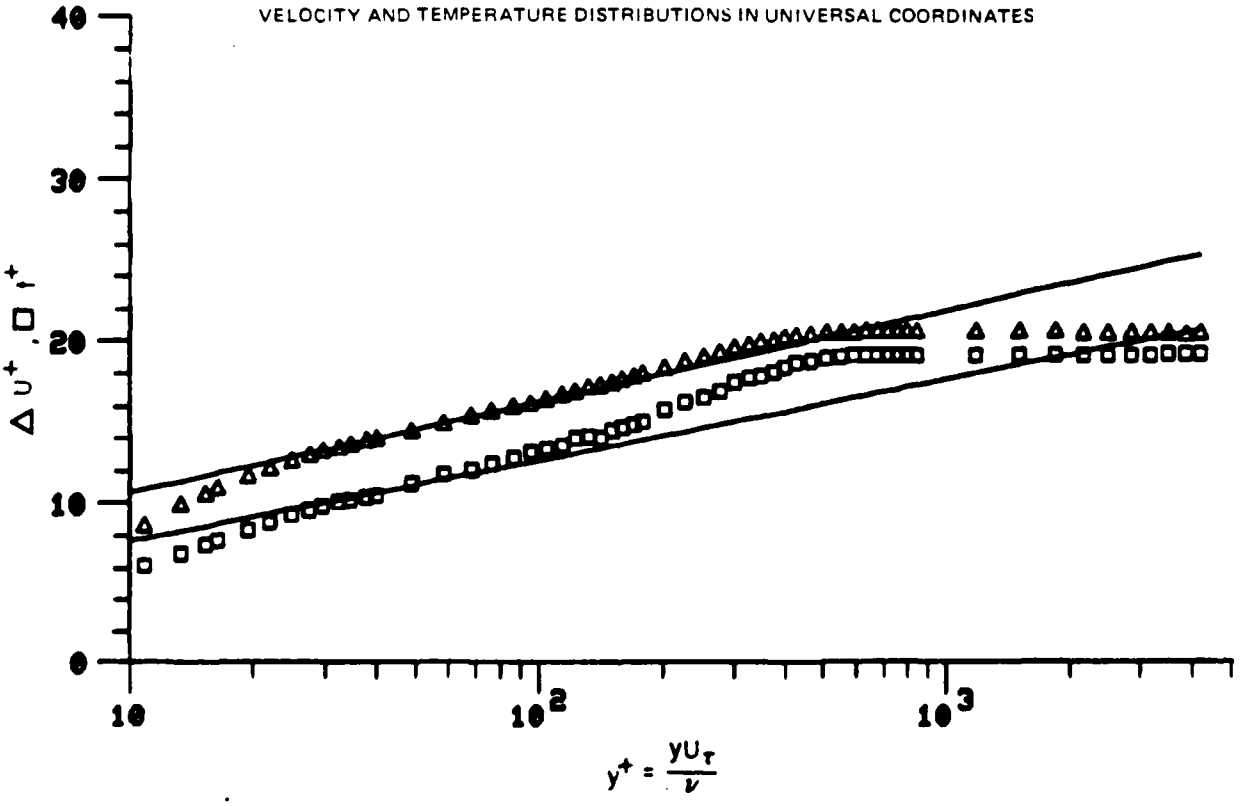
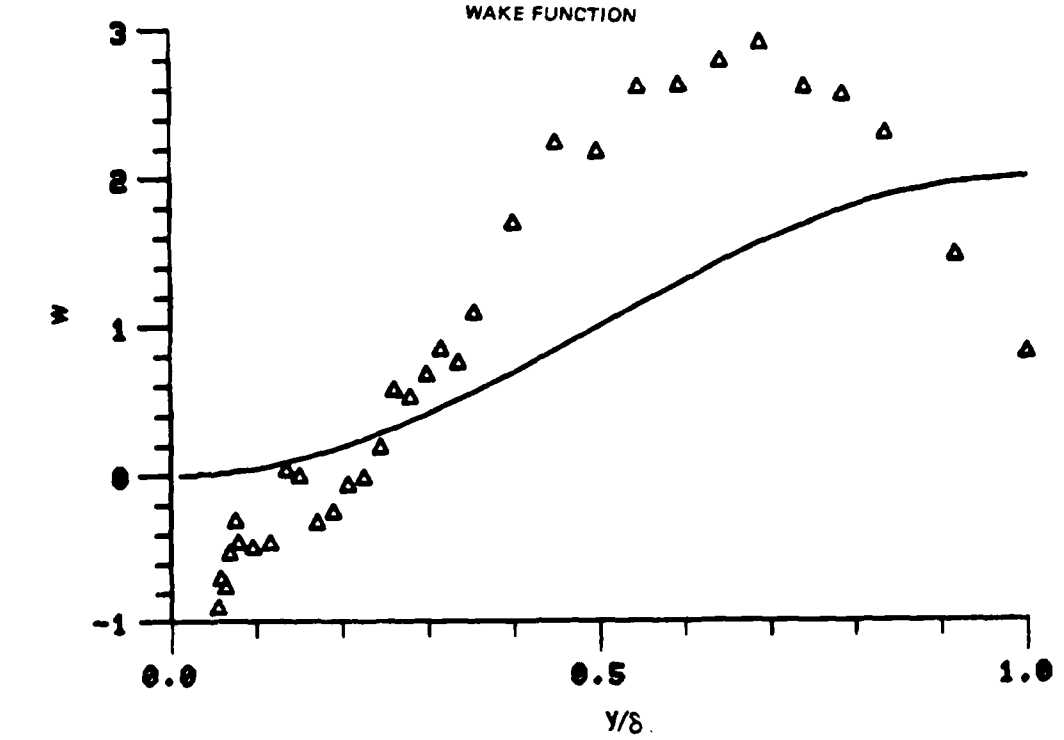


Figure 32. Boundary Layer Velocity and Temperature Profiles
Run No. 1 Point No. 14

78-12-100-1



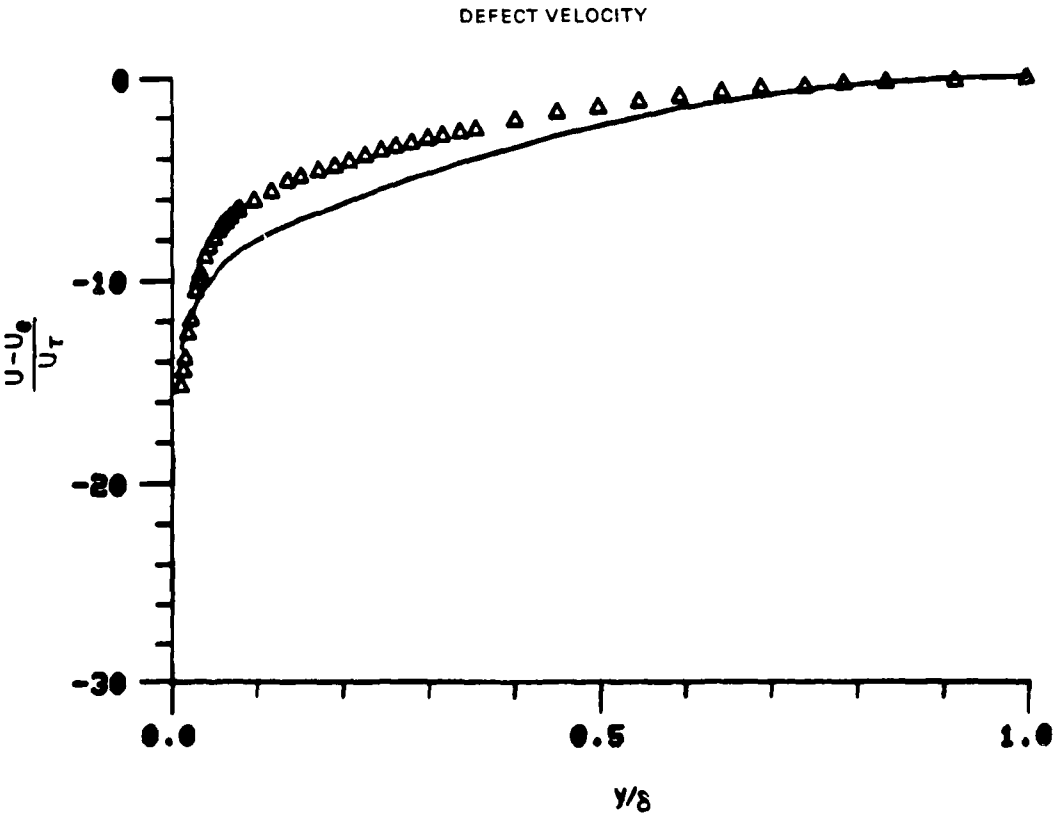
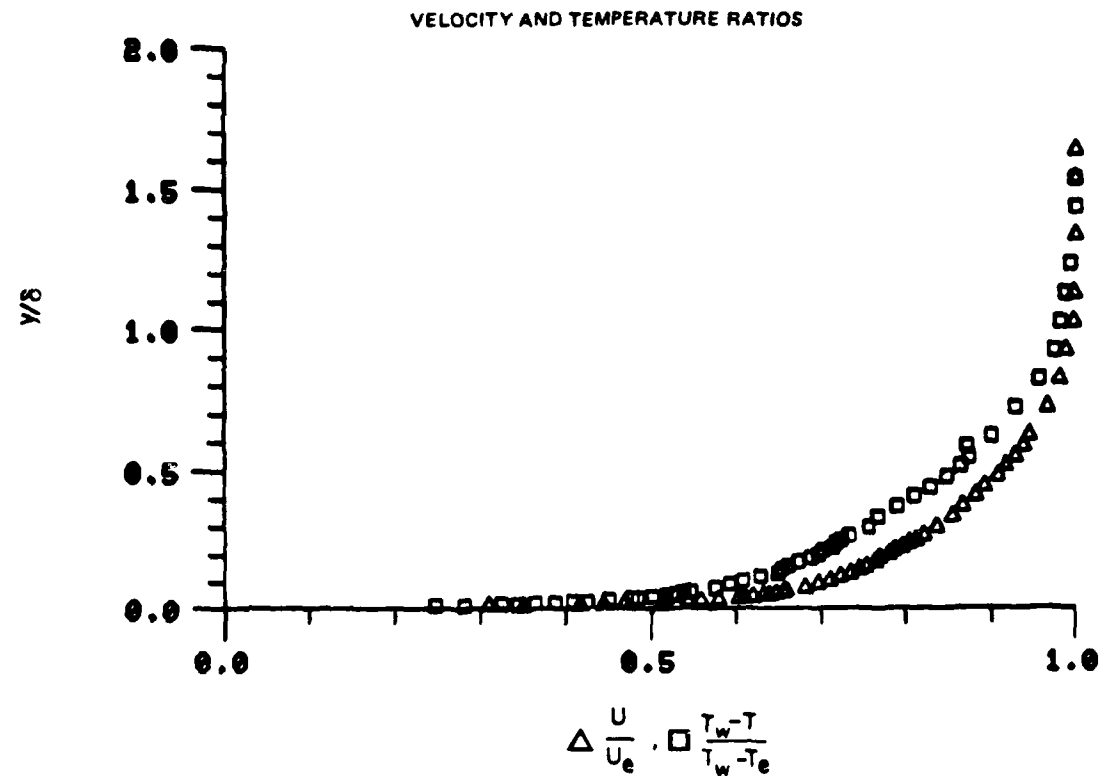


Figure 32. Boundary Layer Velocity Profiles
Run No.1 Point No.14

78-12-100-2



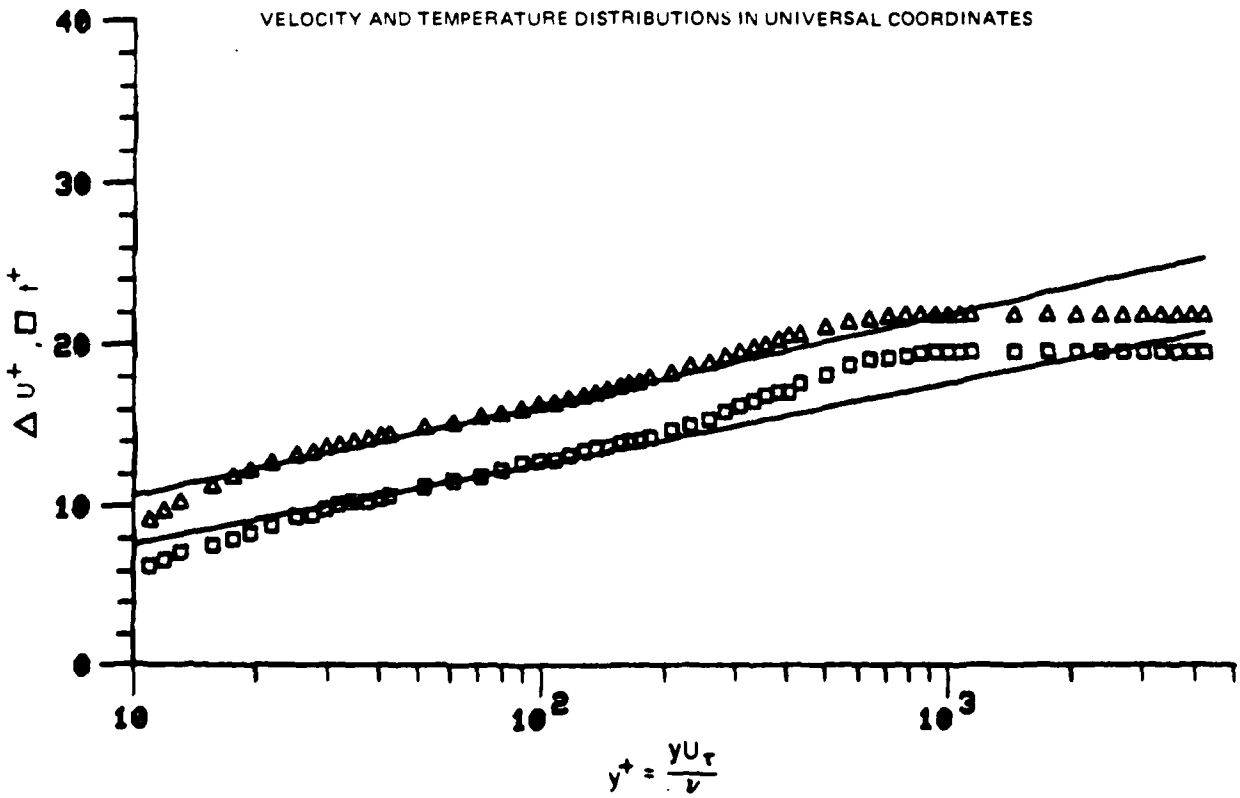
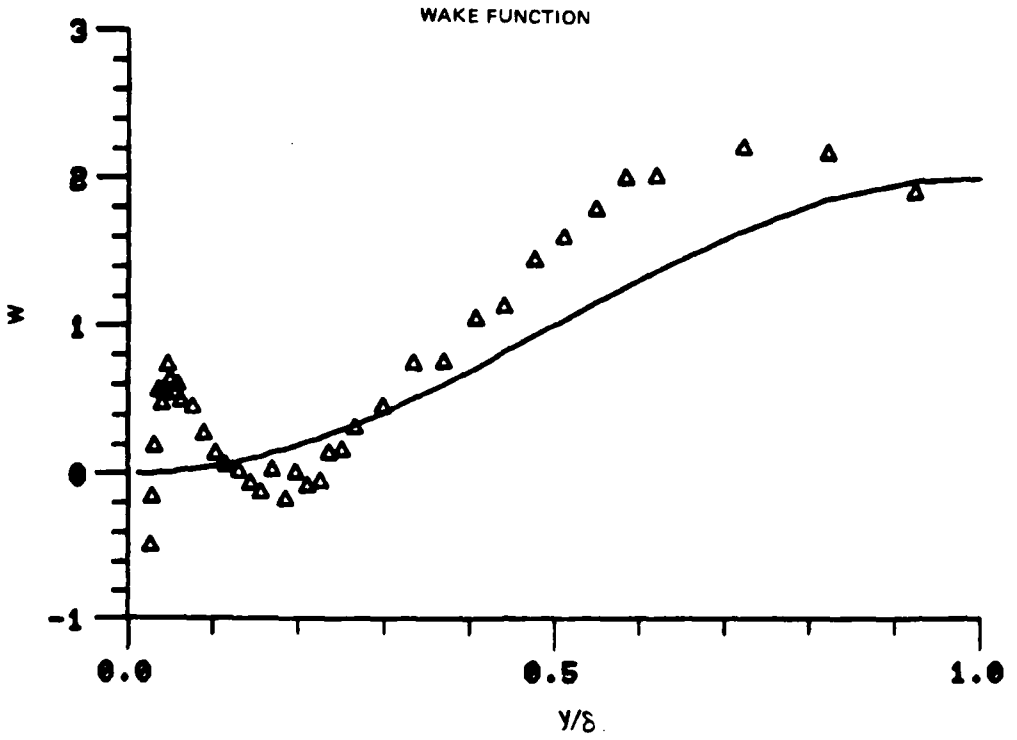


Figure 33. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No. 15

78-12-100-1



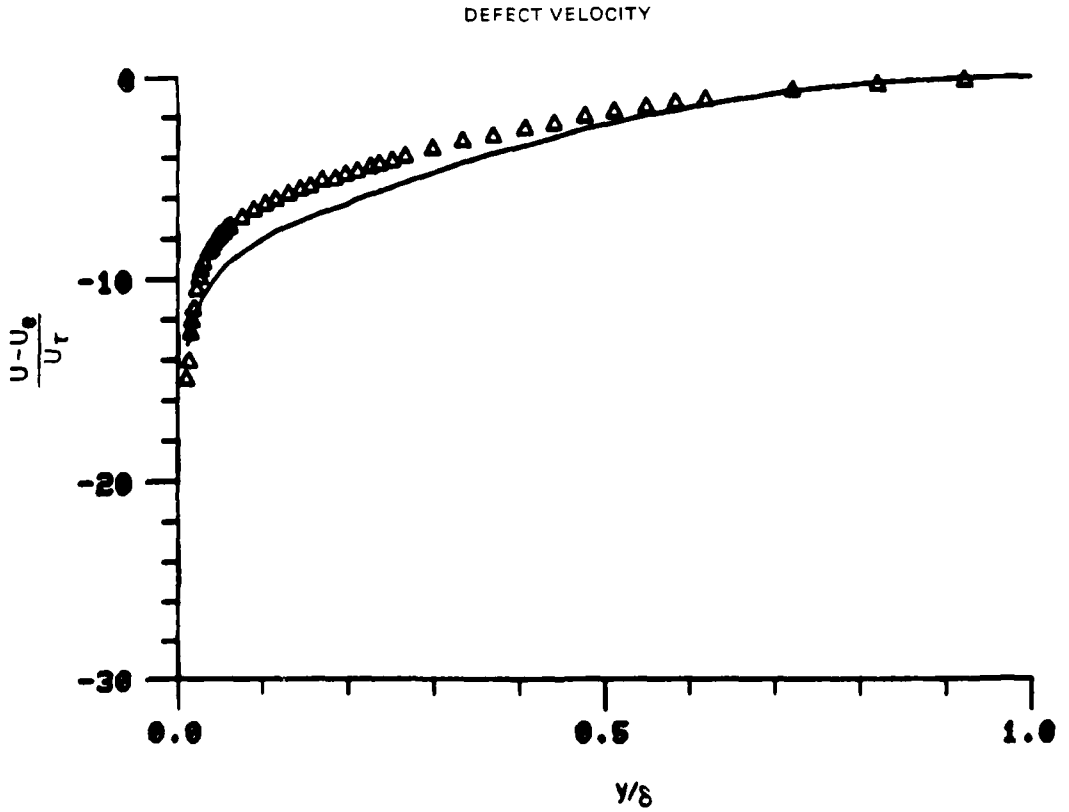


Figure 33. Boundary Layer Velocity Profiles
Run No.1 Point No.15

78-12-100-2

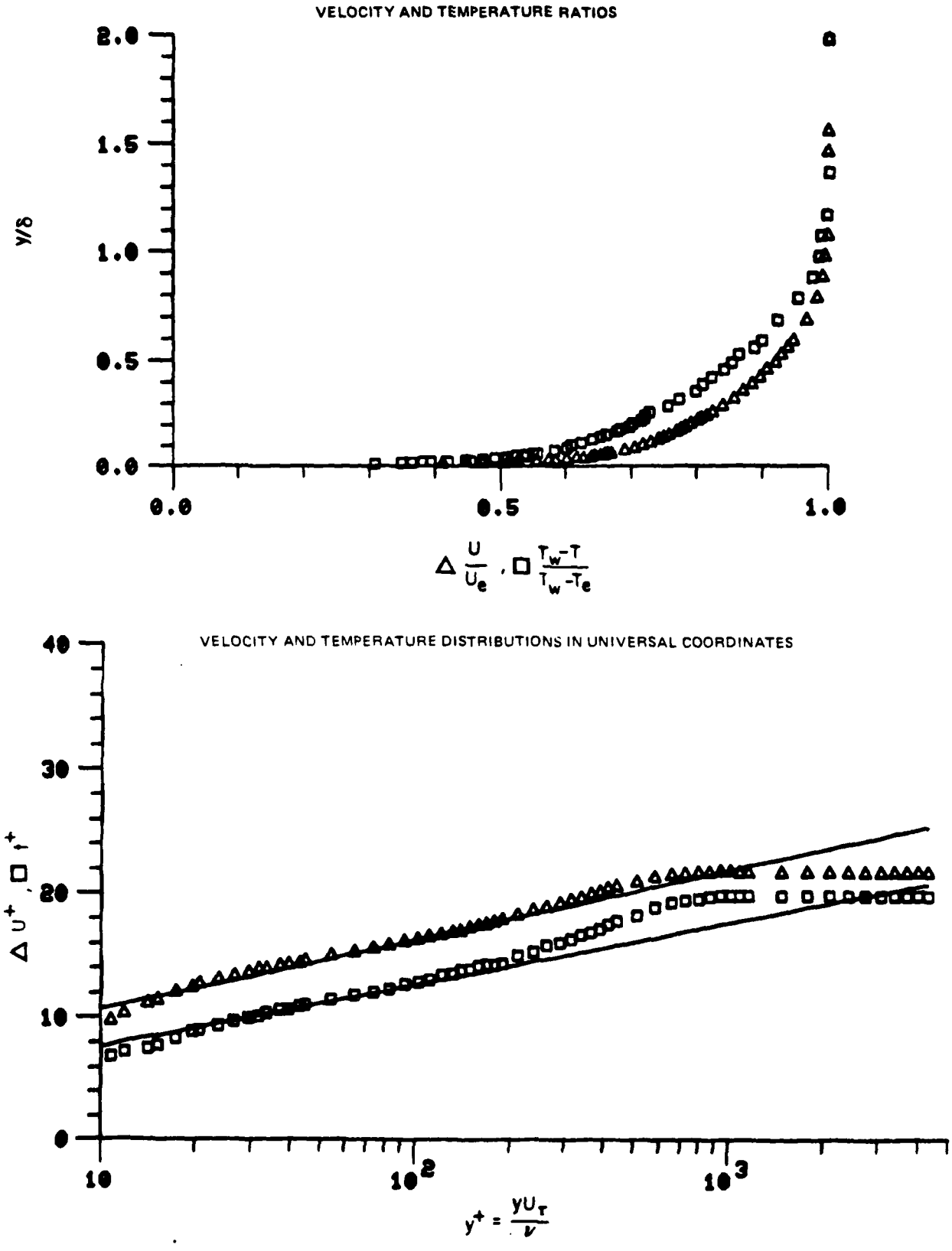
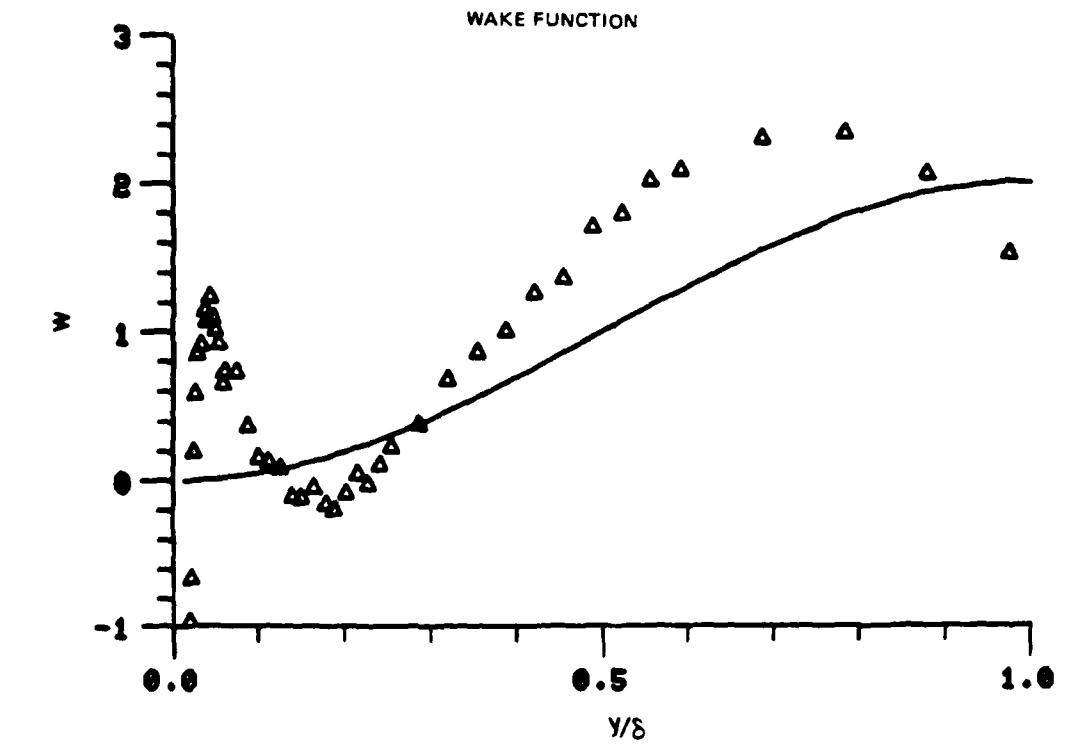


Figure 34. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.17

78-12-100-1



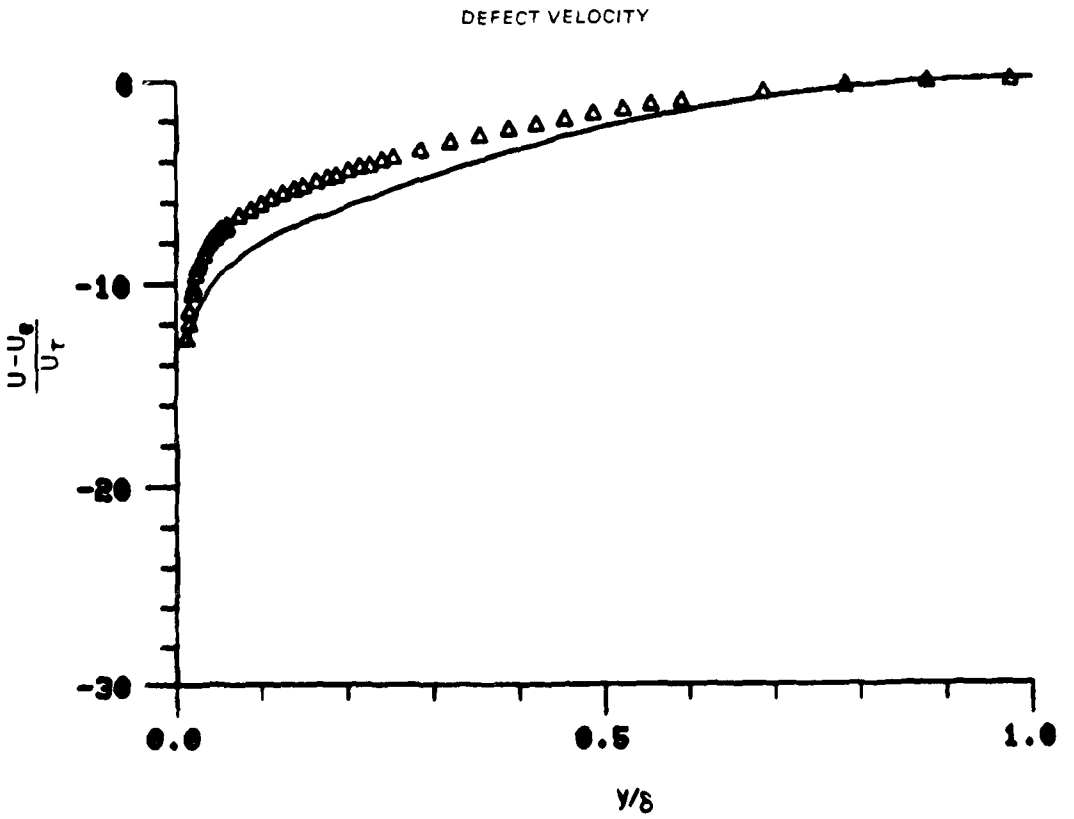
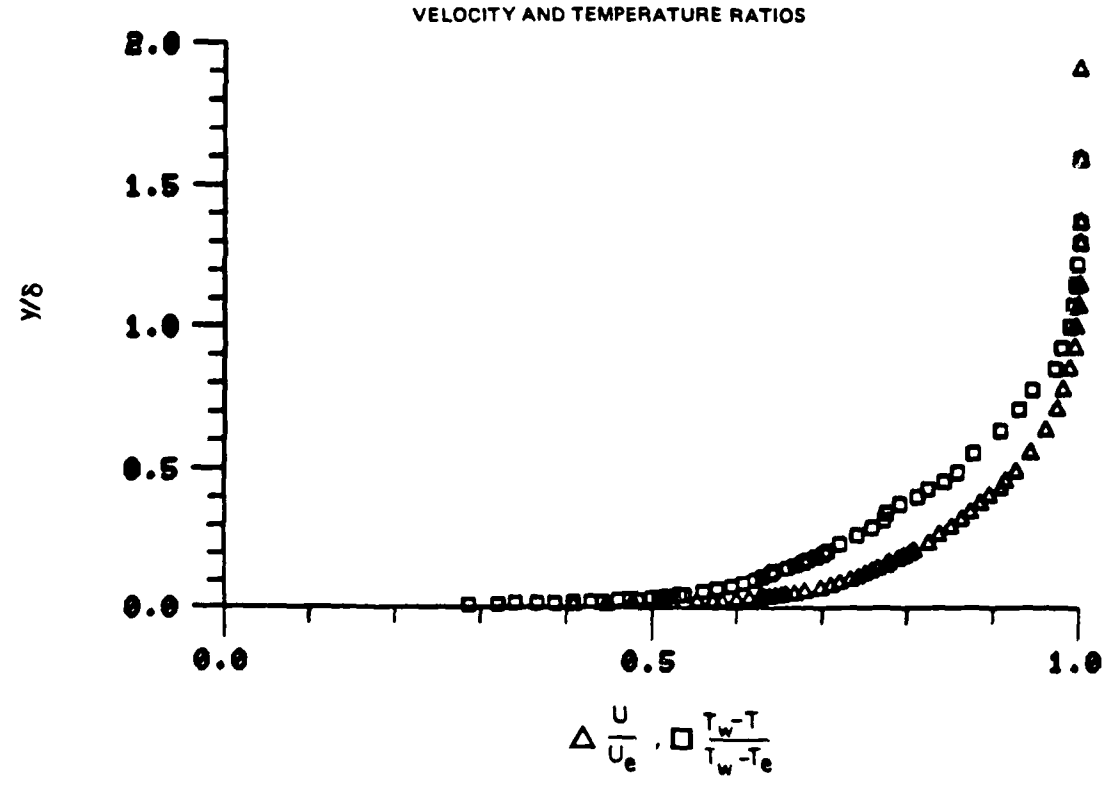


Figure 34. Boundary Layer Velocity Profiles
Run No. 1 Point No. 17

78-12-100-2



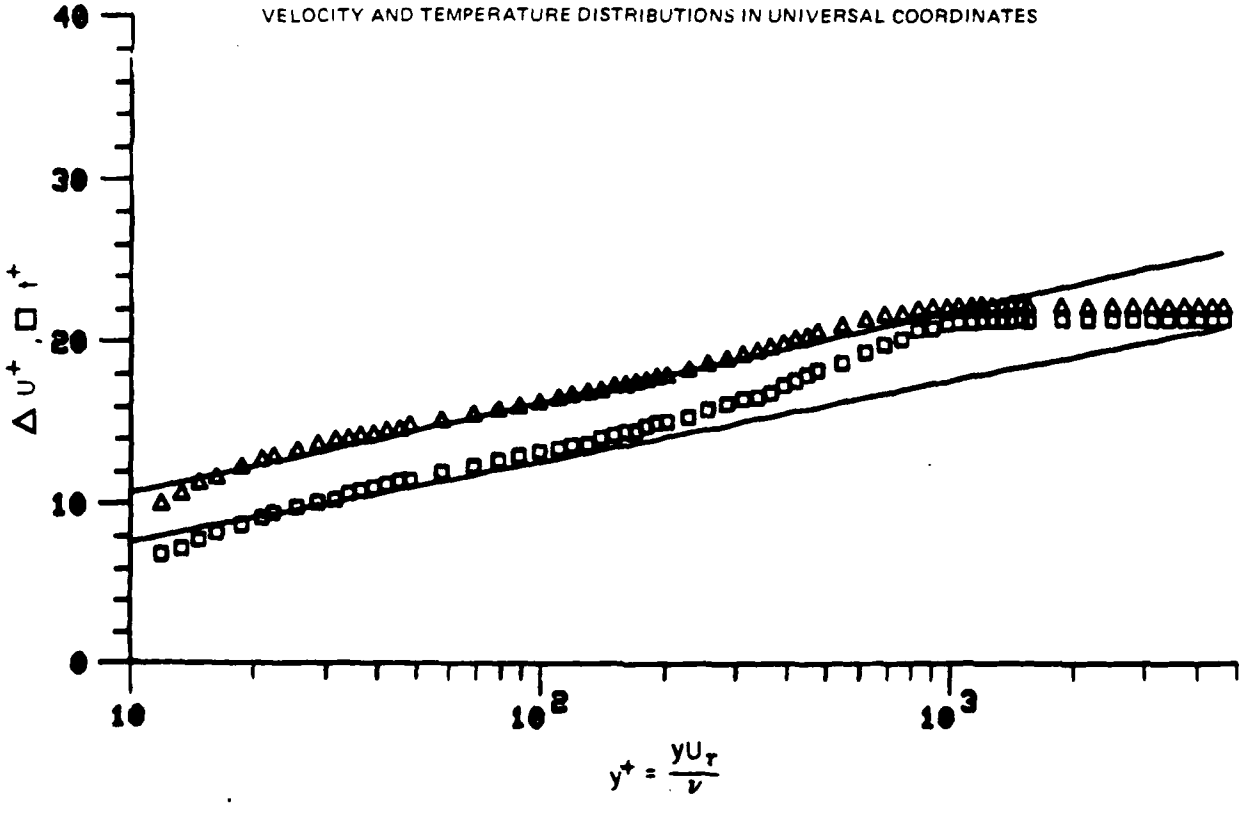
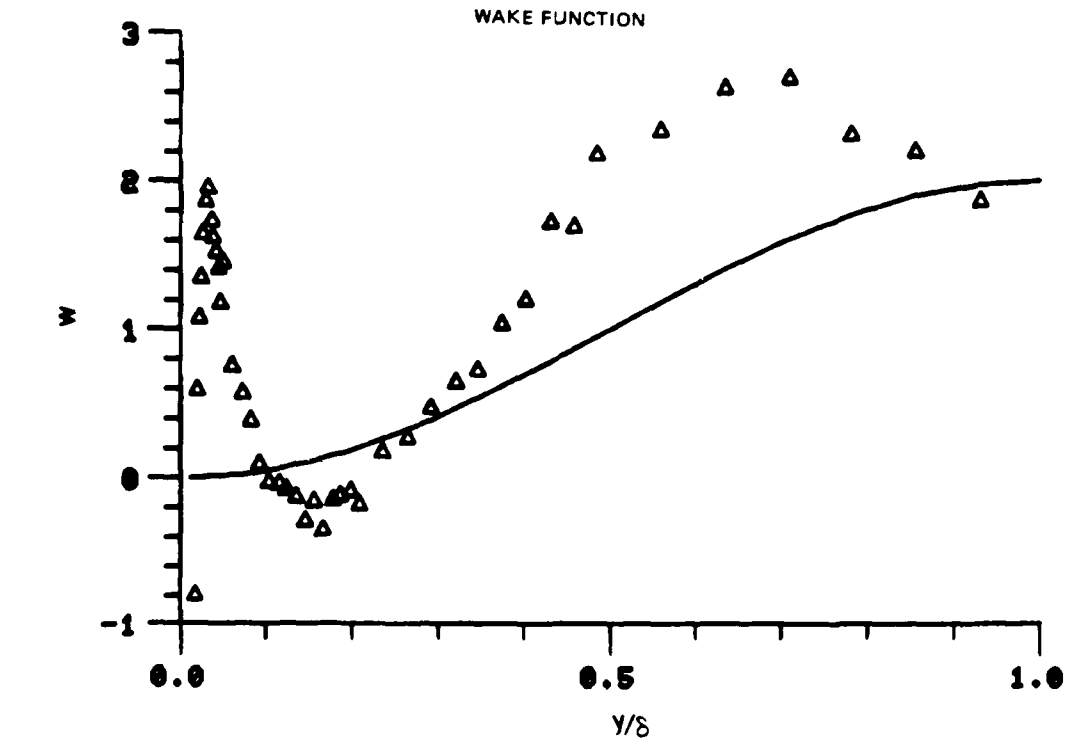


Figure 35. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No. 18

78-12-100-1



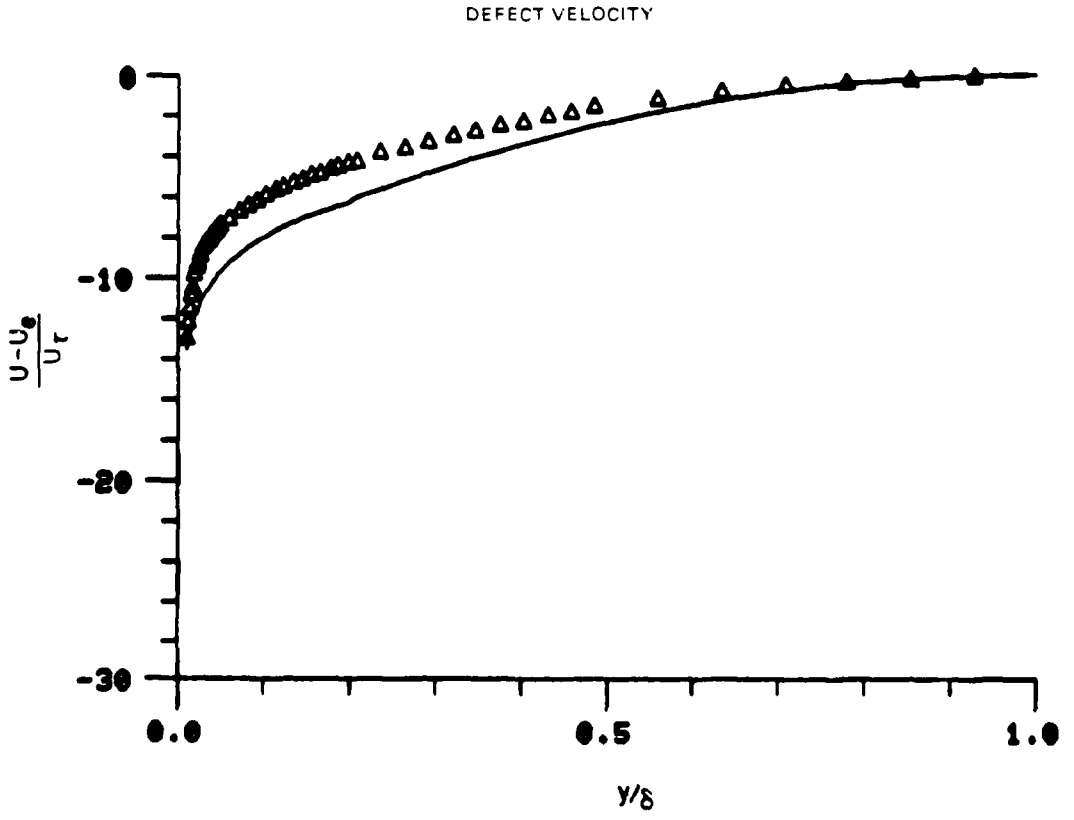


Figure 35. Boundary Layer Velocity Profiles
Run No.1 Point No.18

78-12-100-2

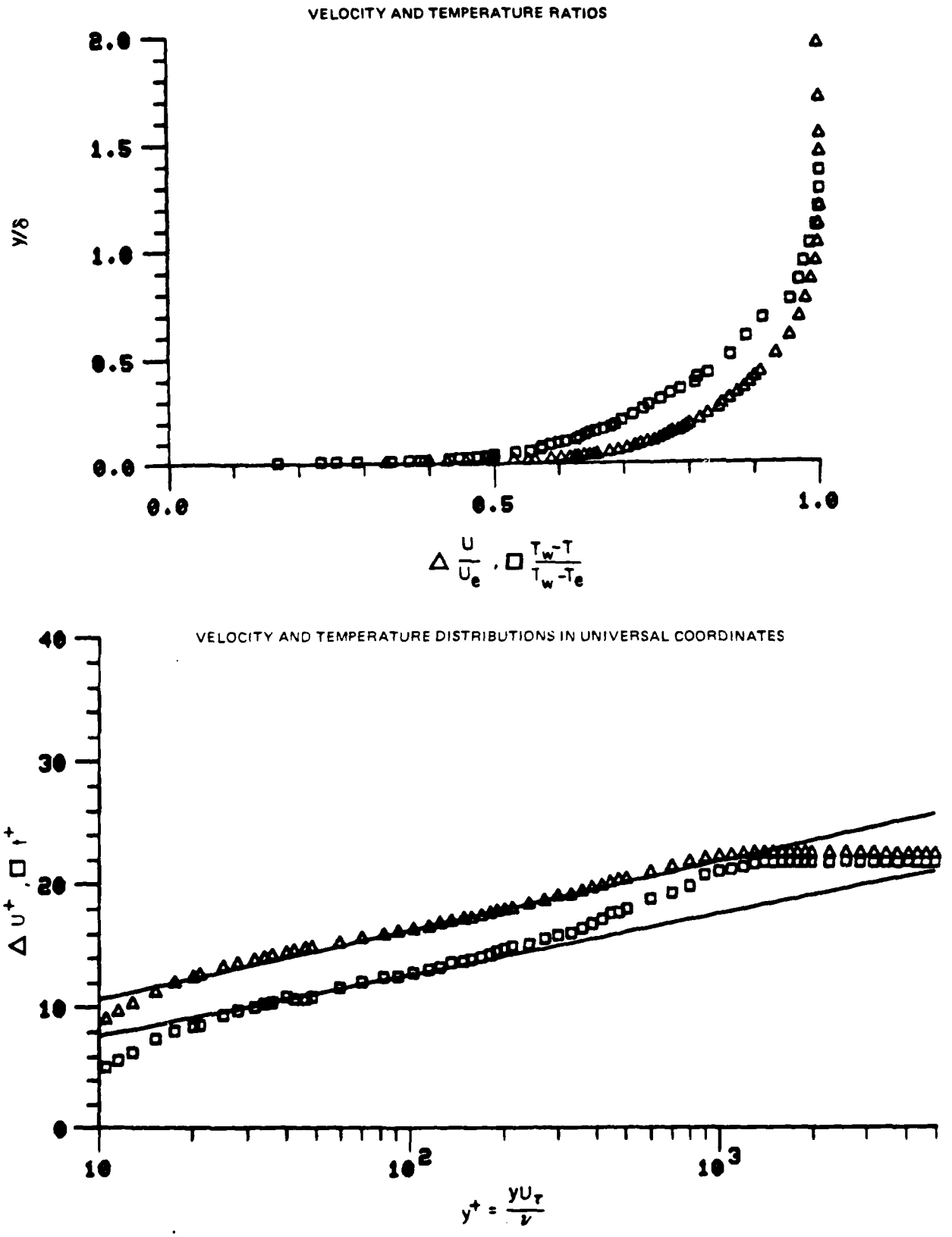
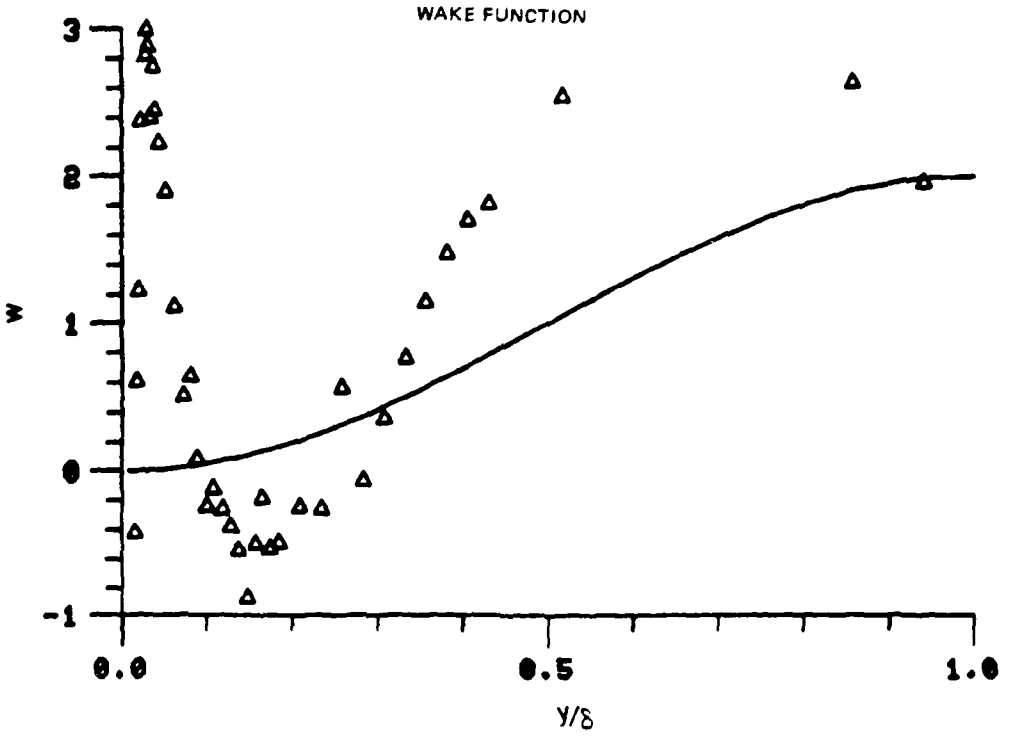


Figure 36. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.19

78-12-100-1



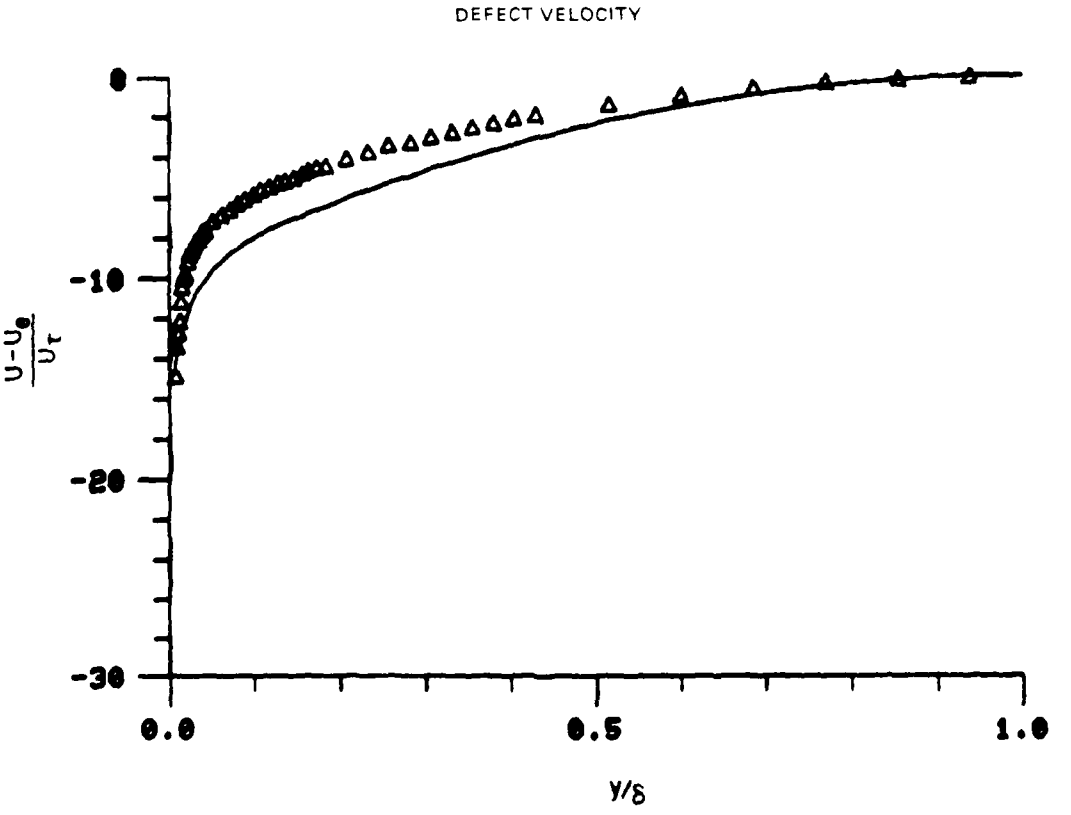
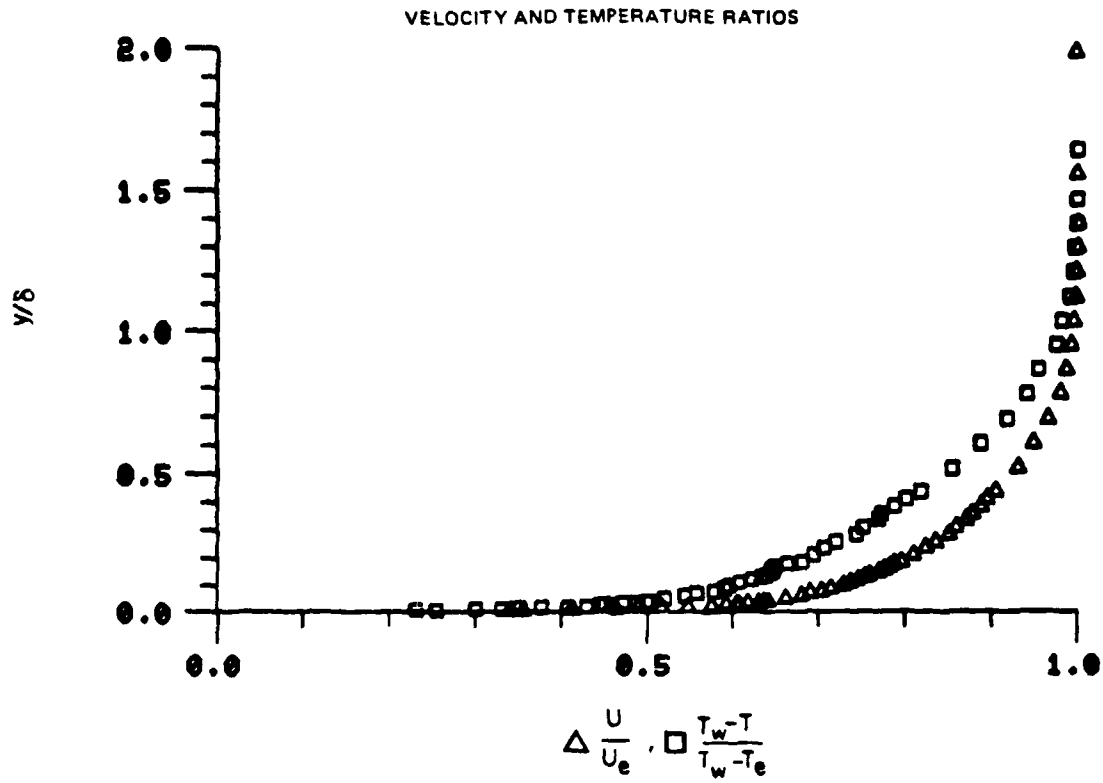


Figure 36. Boundary Layer Velocity Profiles
Run No.1 Point No.19

78-12-100-2



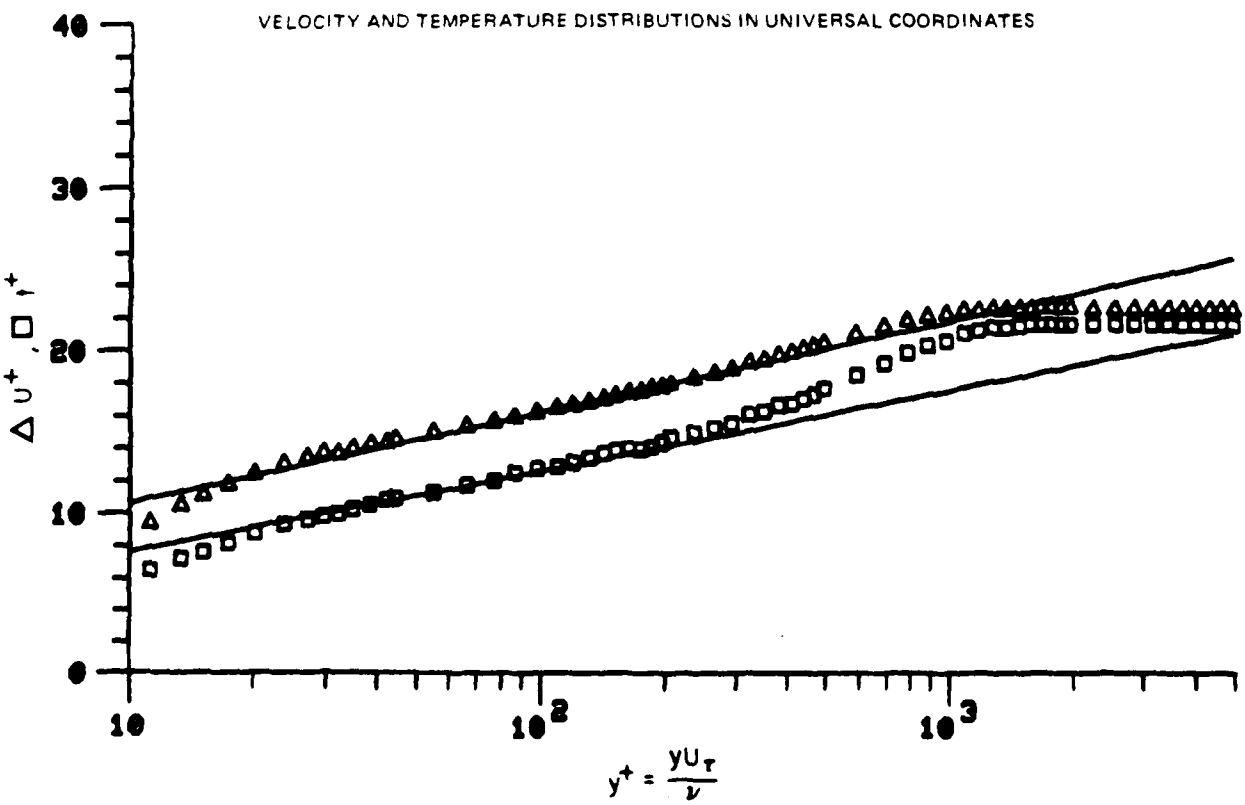


Figure 37. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.20

78-12-100-1

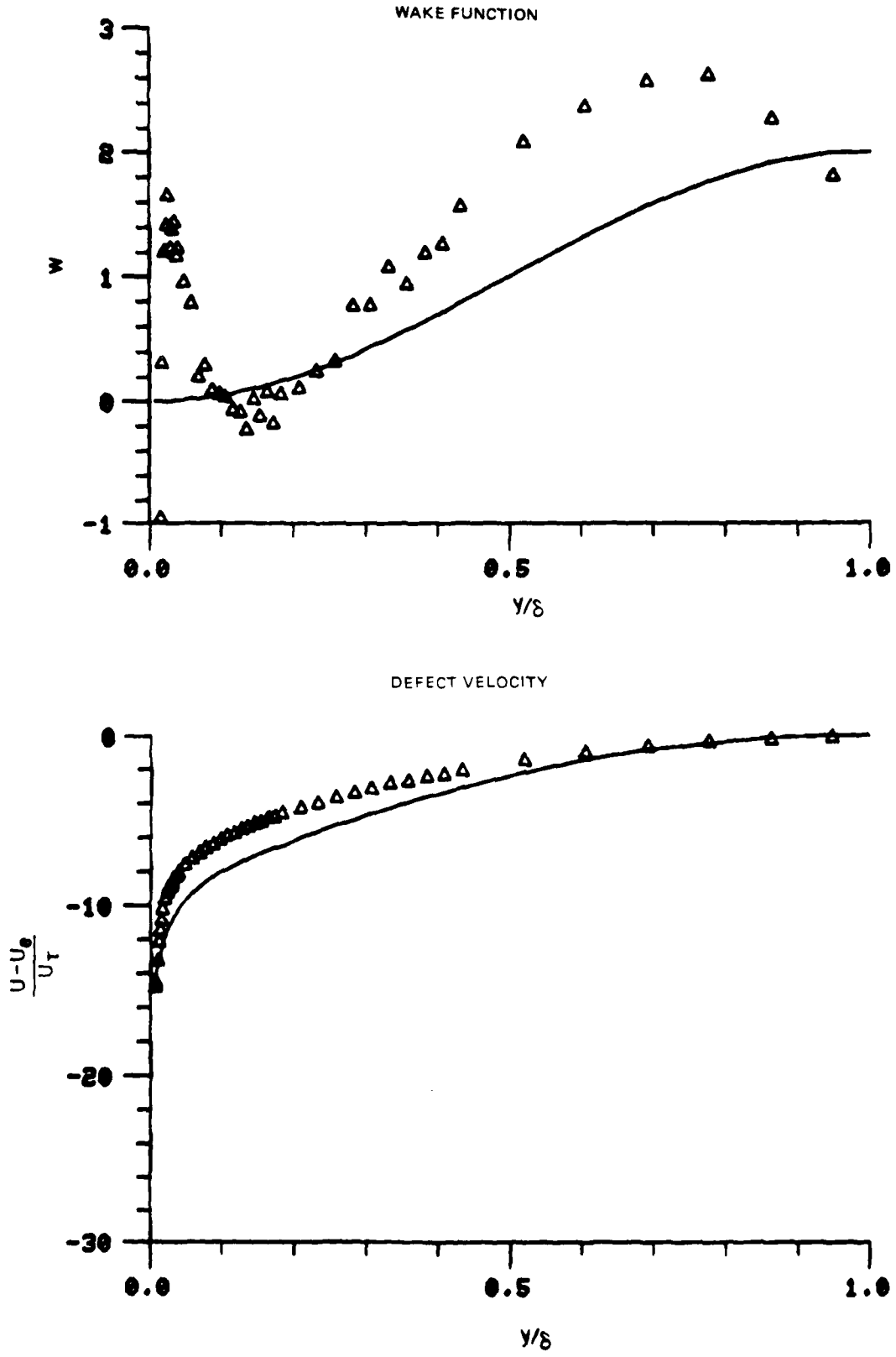
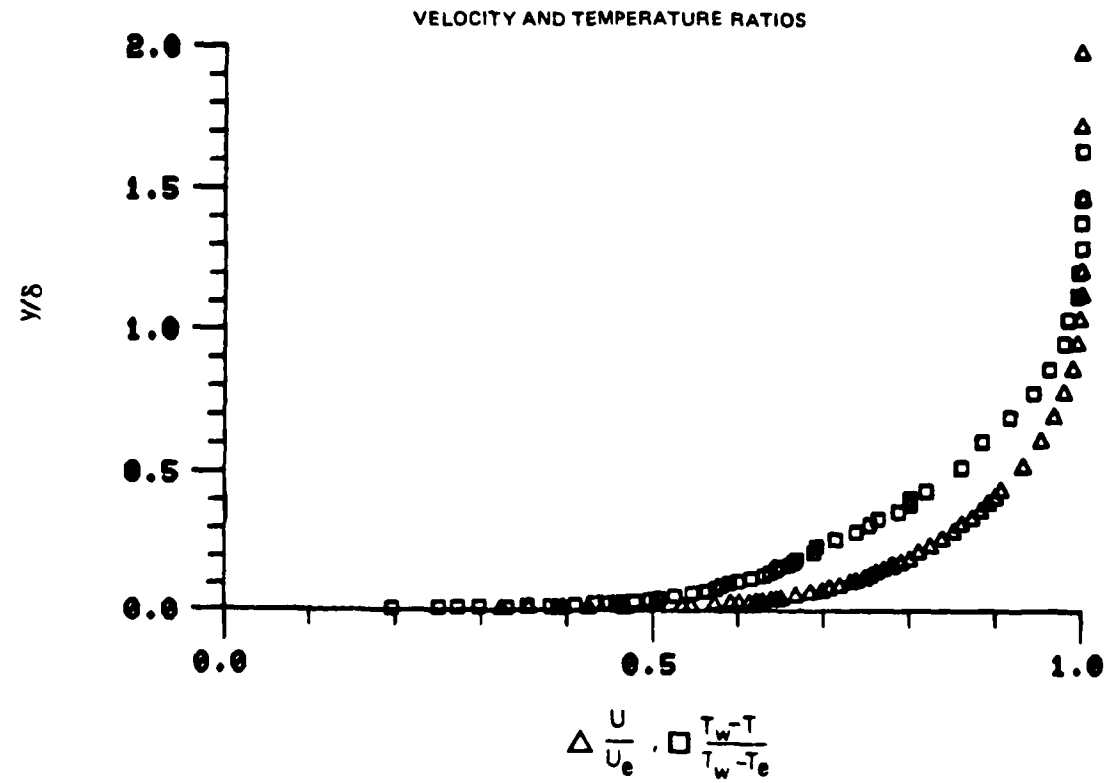


Figure 37. Boundary Layer Velocity Profiles
Run No.1 Point No.20

78-12-100-2



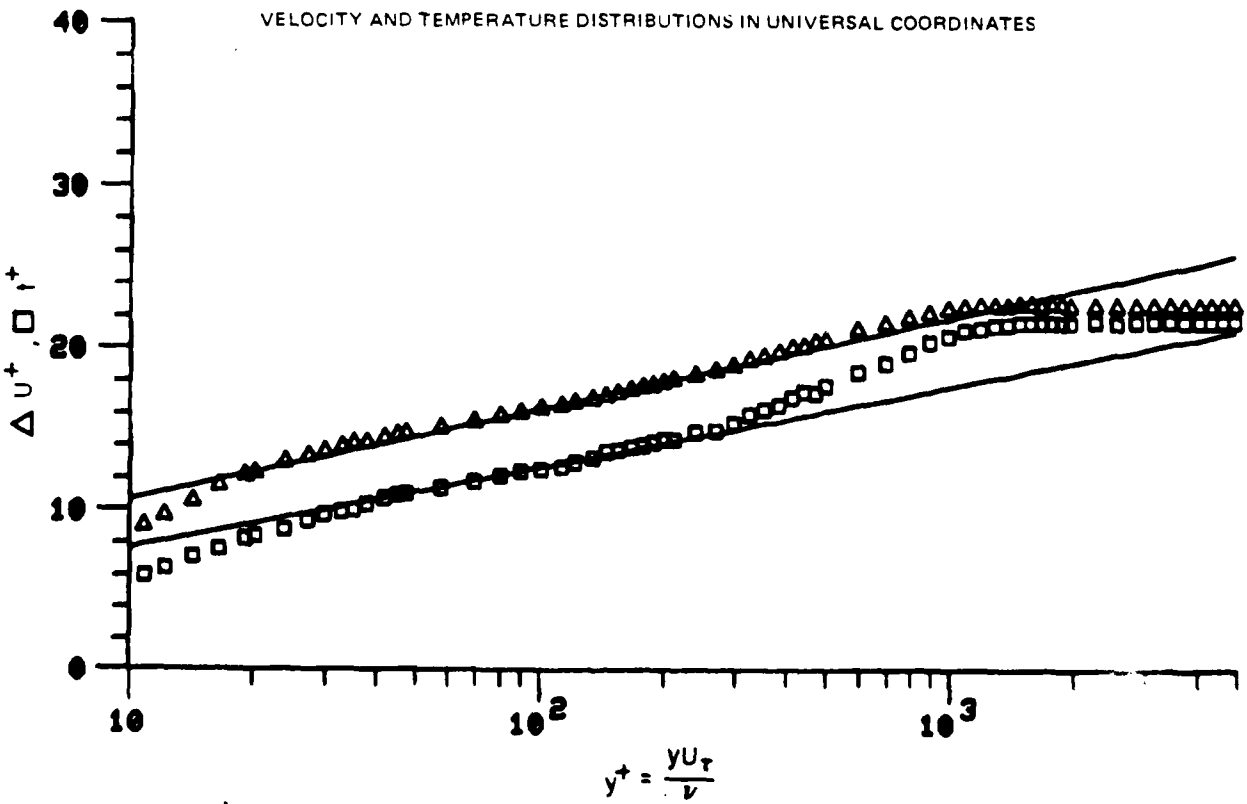
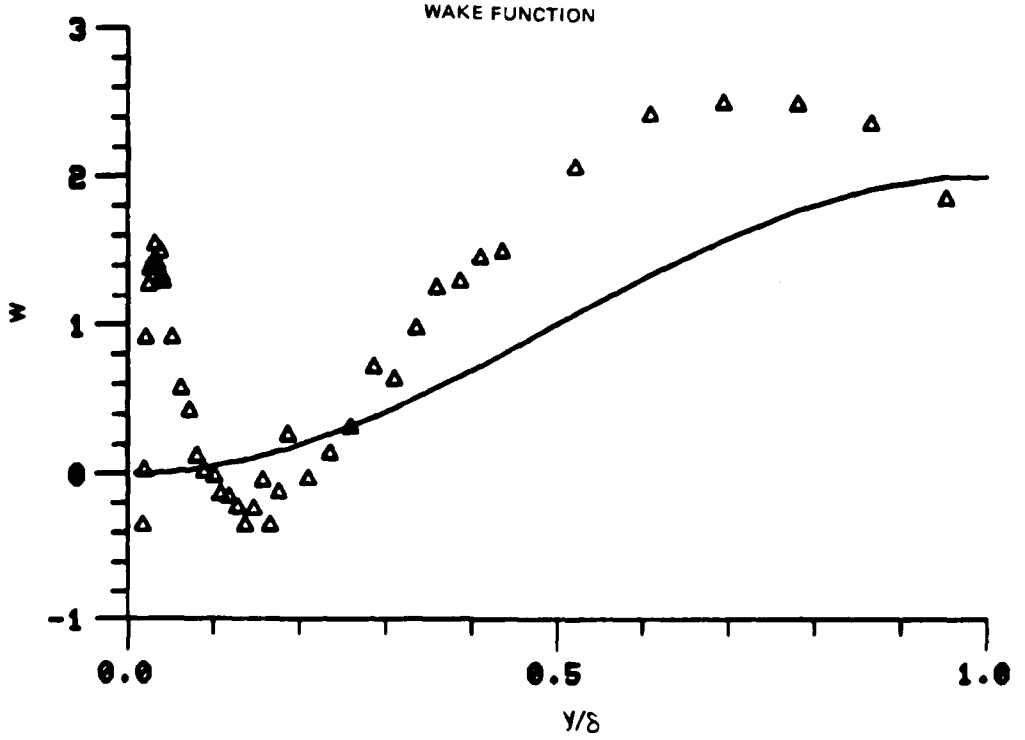


Figure 38. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No. 21

78-12-100-1



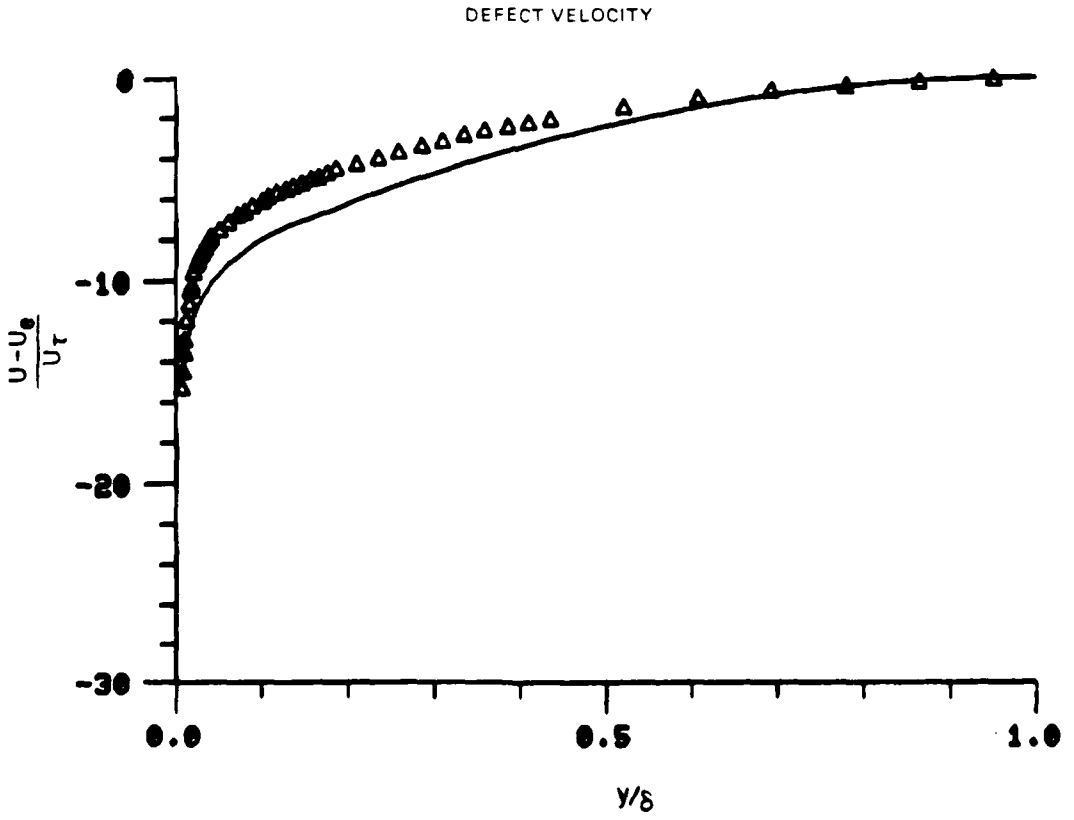
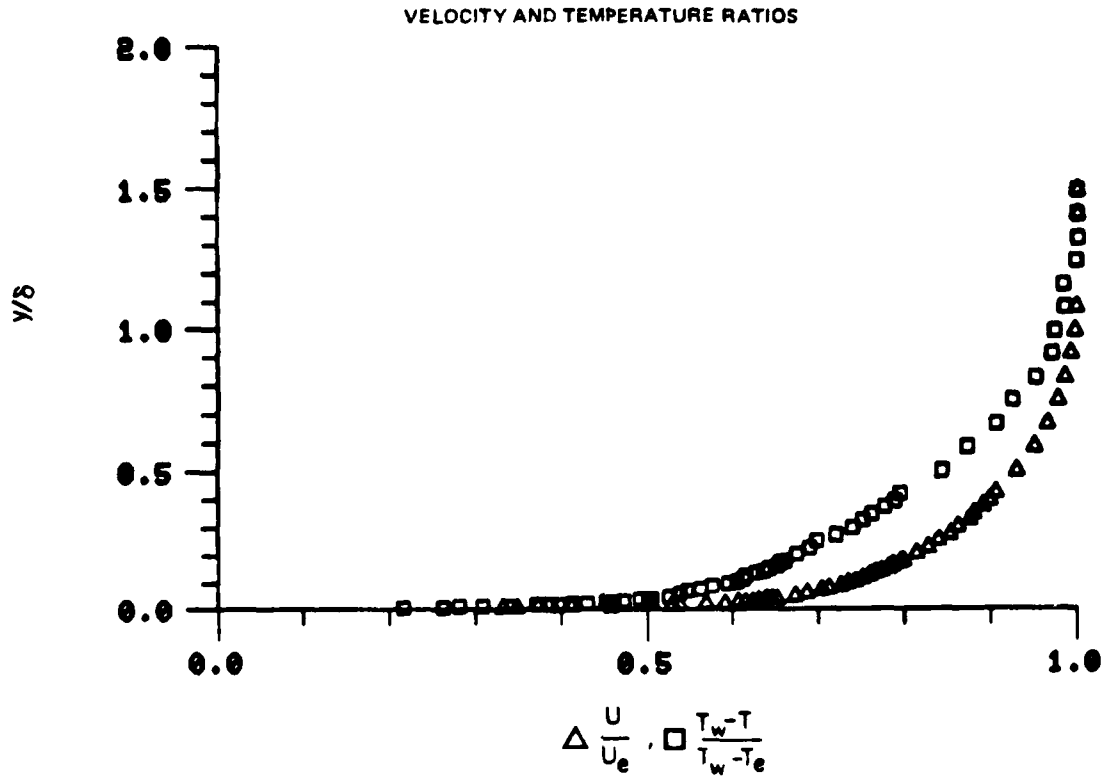


Figure 38. Boundary Layer Velocity Profiles
Run No.1 Point No.21

78-12-100-2



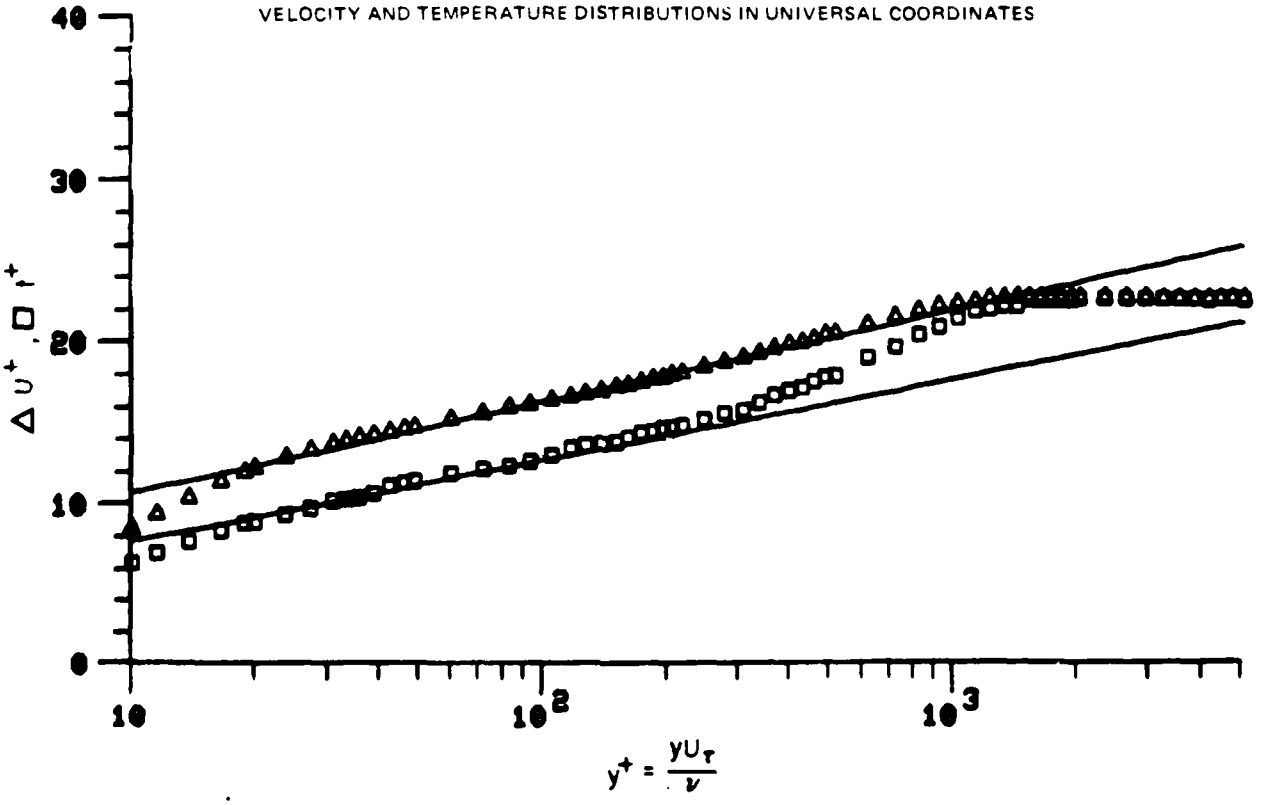
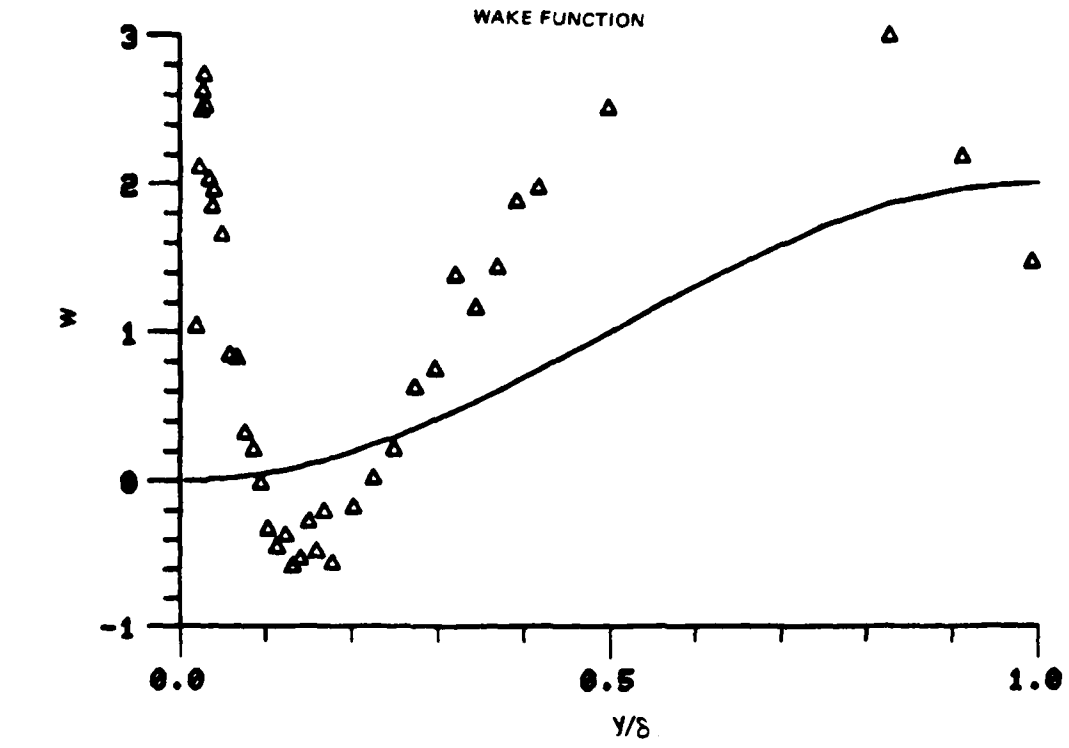


Figure 39. Boundary Layer Velocity and Temperature Profiles
Run No.1 Point No.22

78-12-100-1



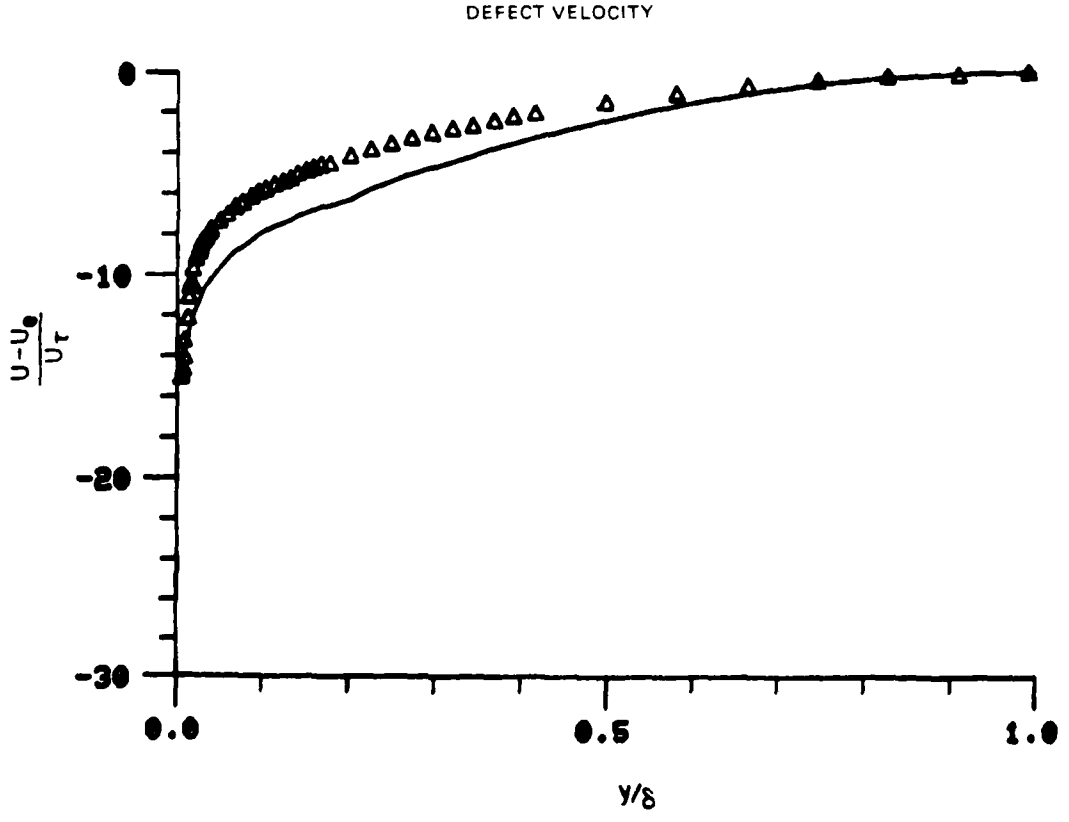


Figure 39. Boundary Layer Velocity Profiles
Run No.1 Point No.22

78-11-100-2

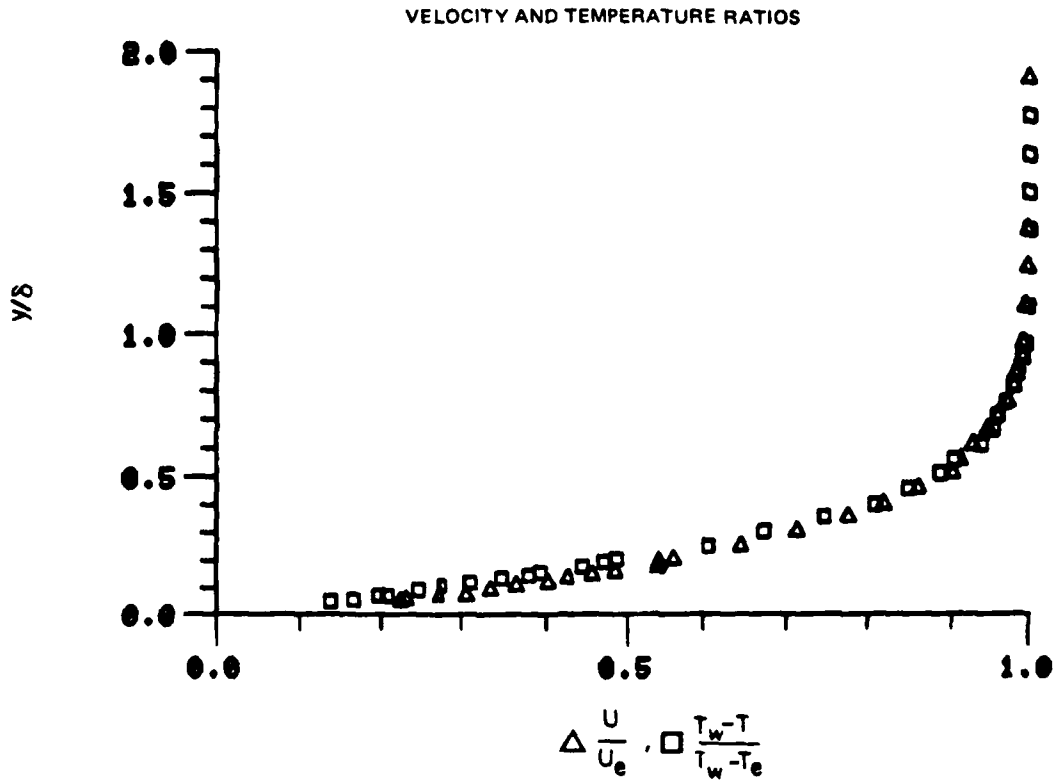


Figure 40. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.4

78-12-100-1

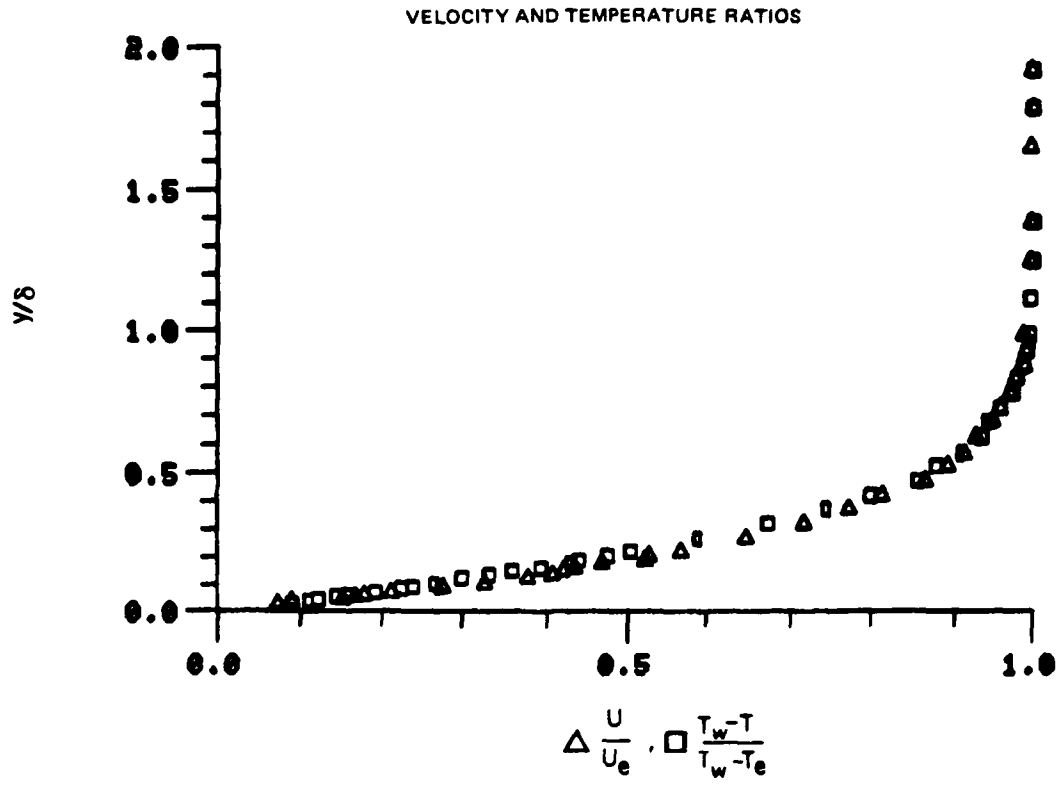


Figure 41. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.5

78-12-100-1

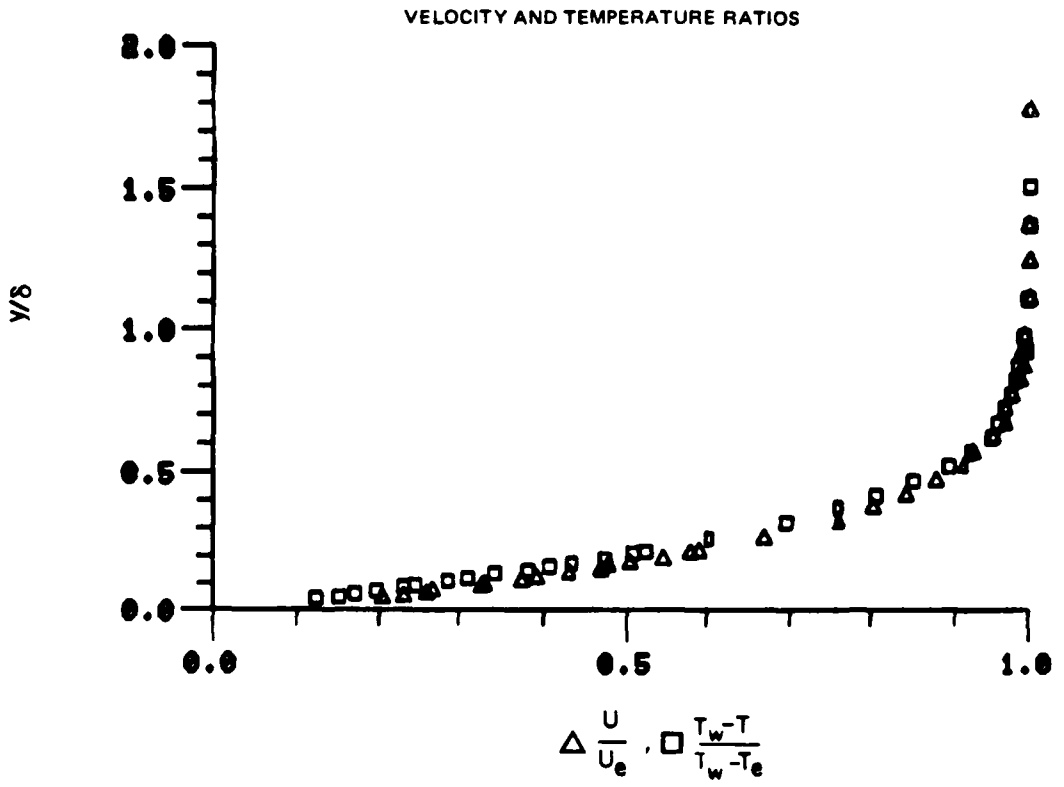


Figure 42. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 6

78-12-100-1

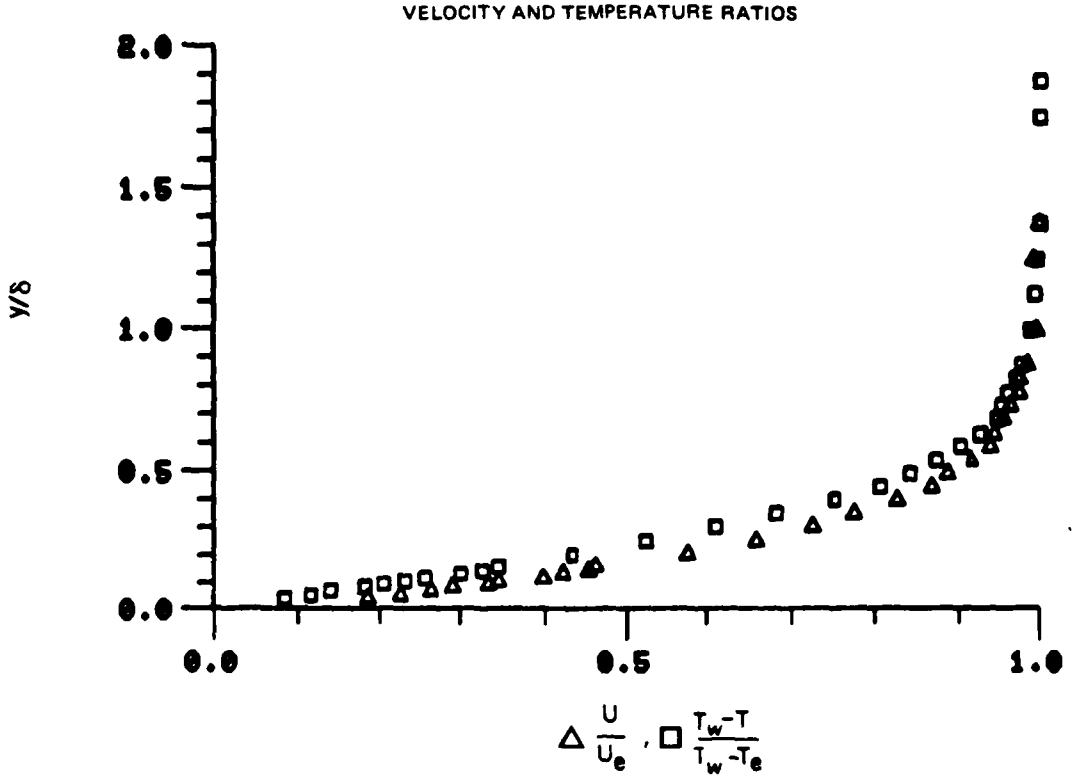


Figure 43. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 7

78-12-100-1

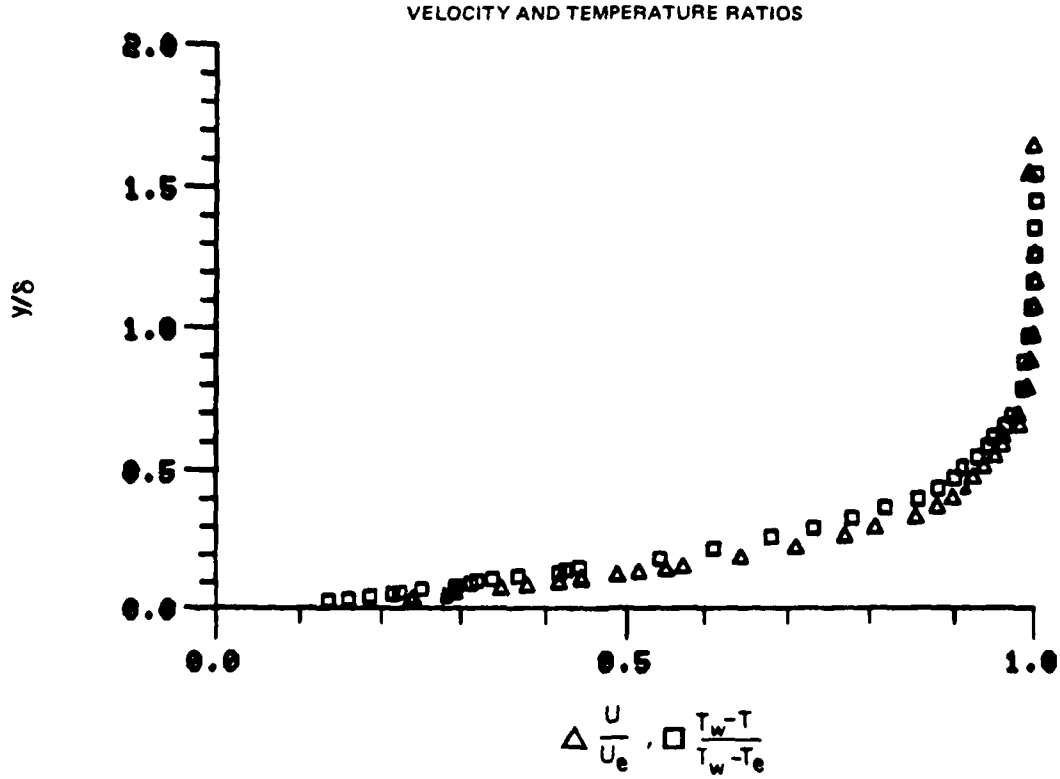


Figure 44. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No. 9

78-12-100-1

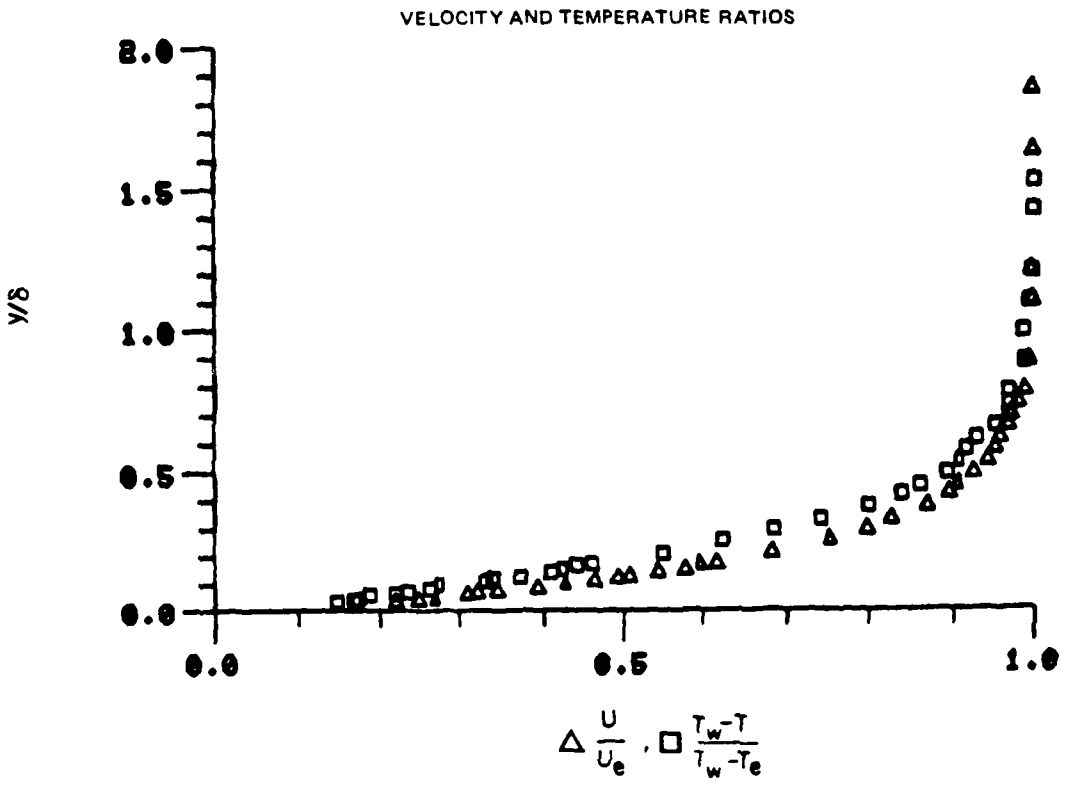


Figure 45. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 10

78-12-100-1

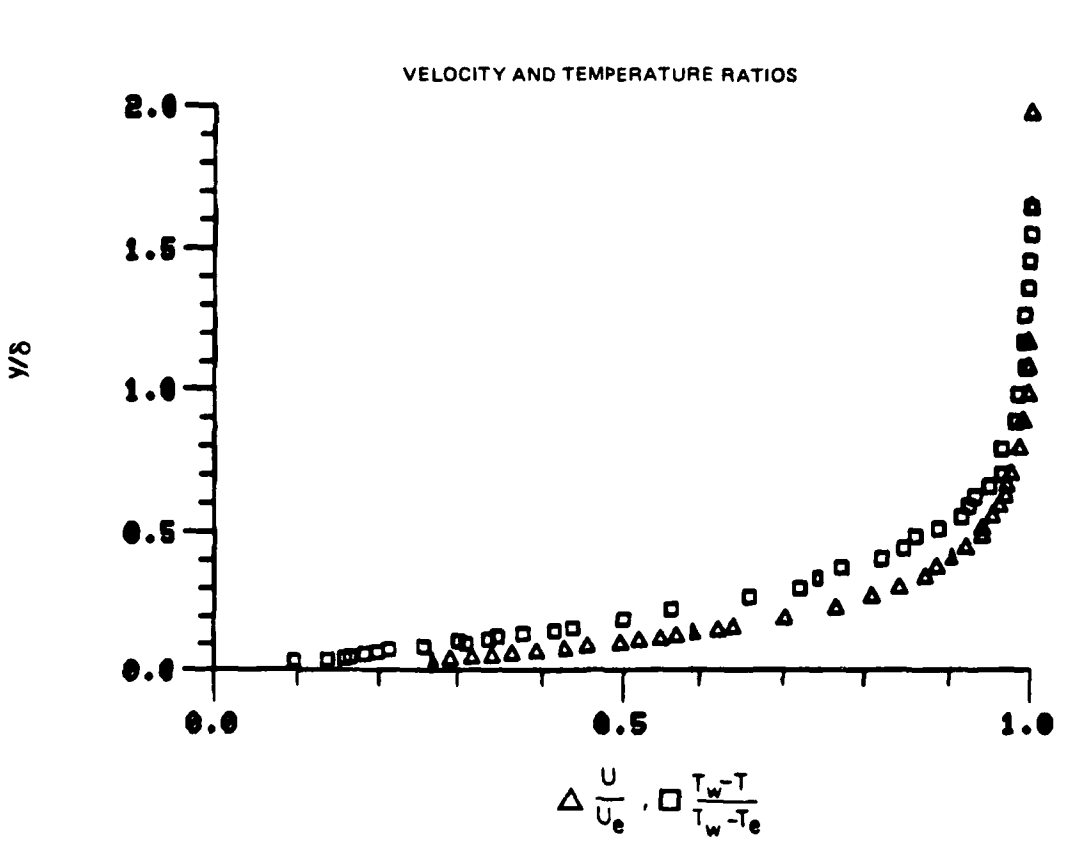


Figure 46. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 11

78-12-100-1

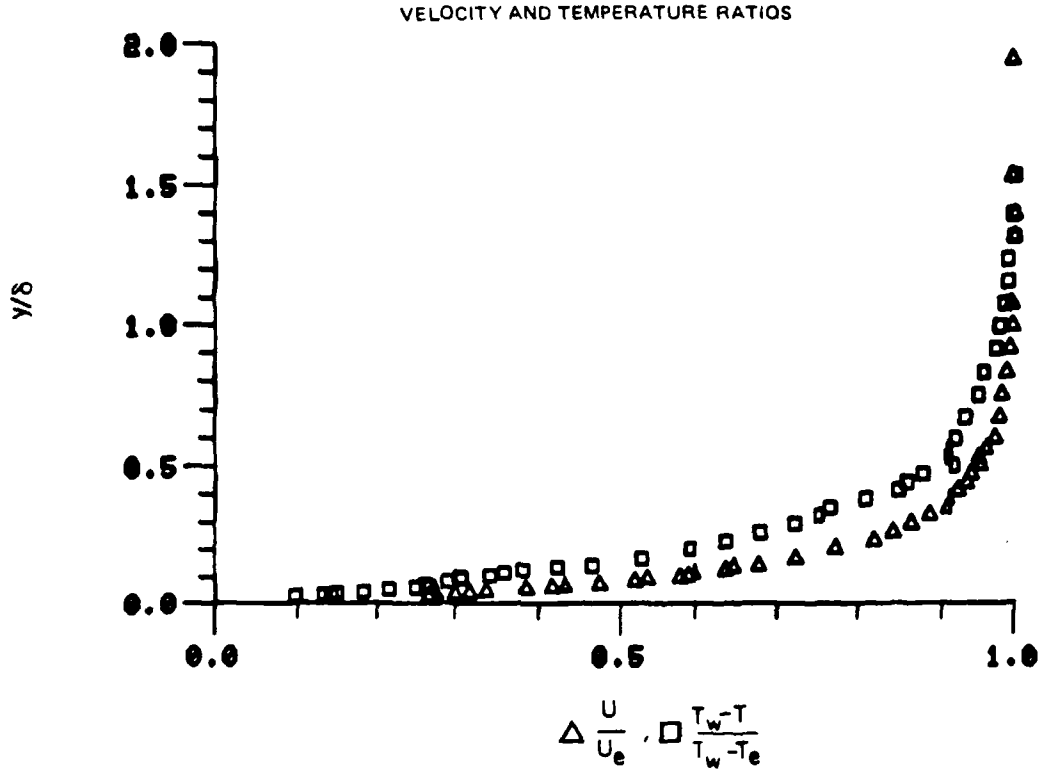


Figure 47. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 12

78-12-100-1

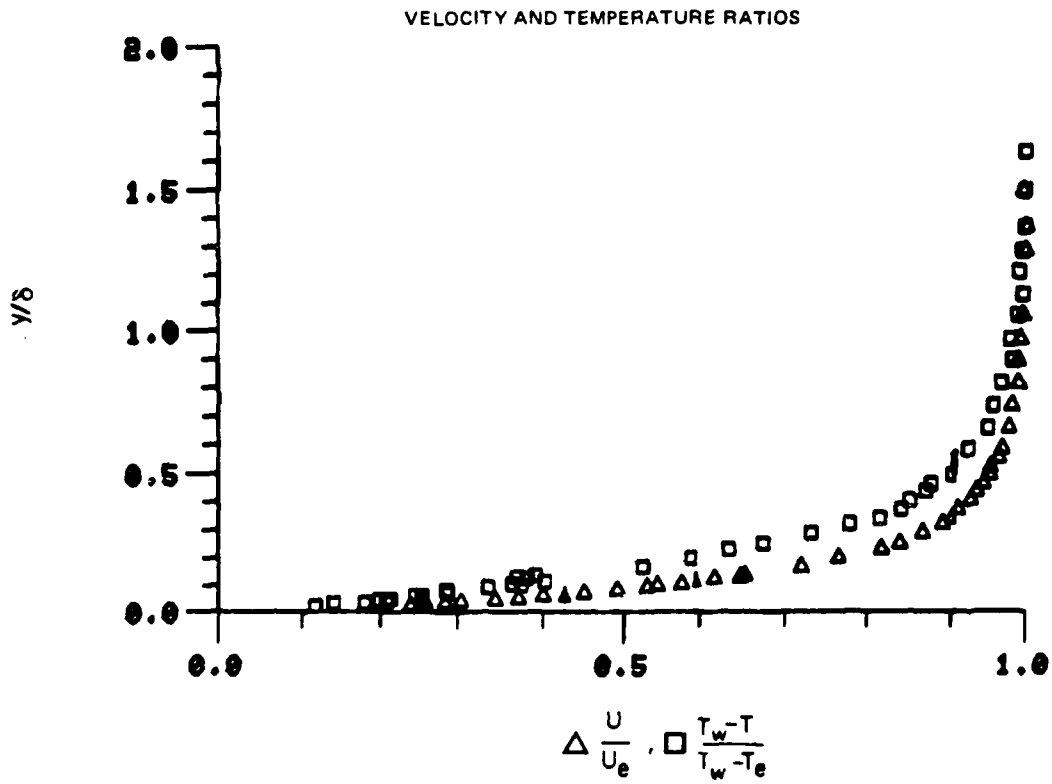


Figure 48. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.13

78-12-100-1

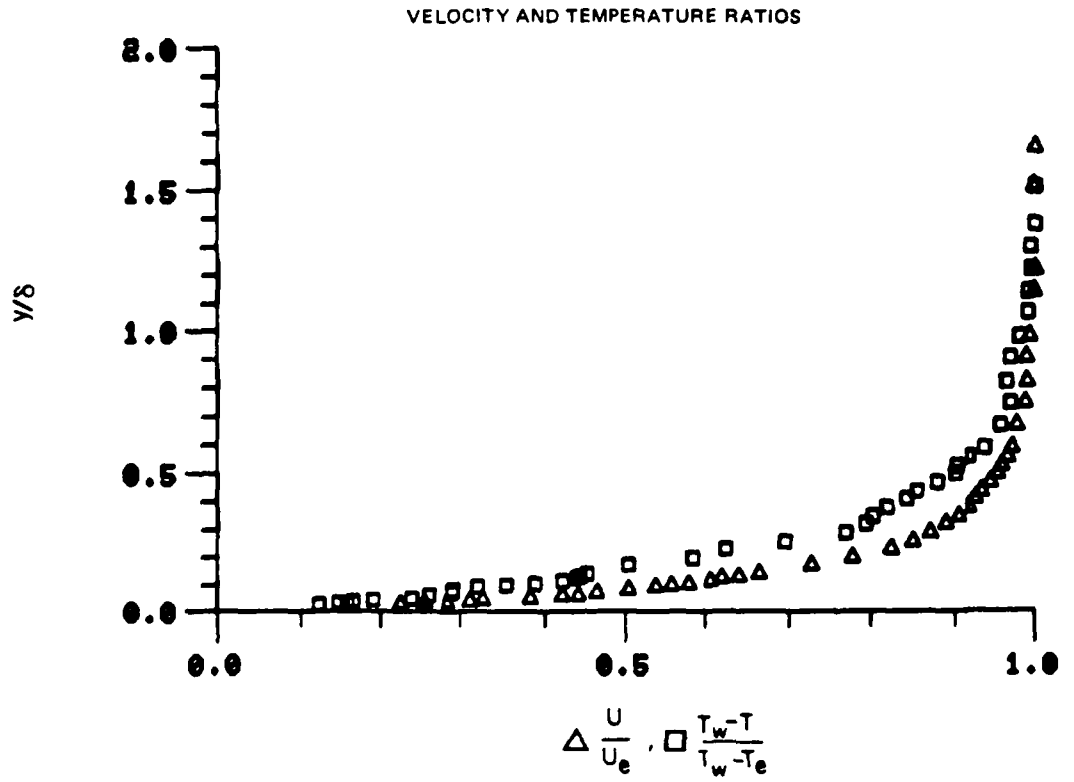


Figure 49. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.14

78-12-100-1

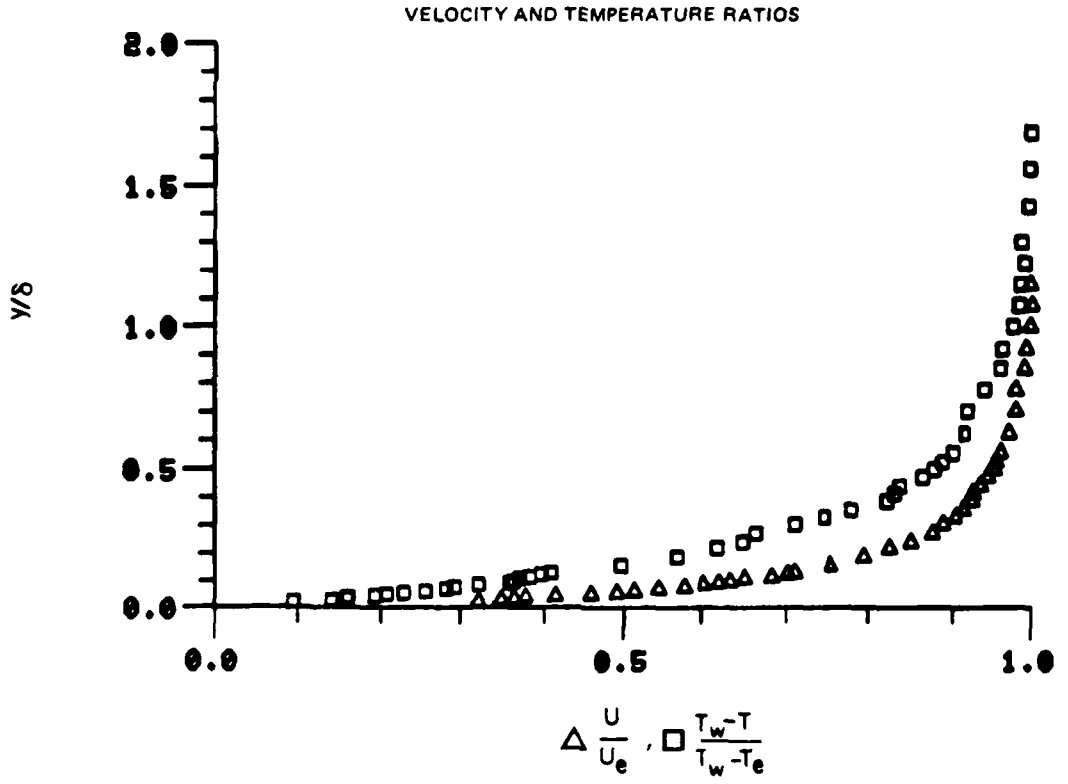


Figure 50. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.15

78-12-100-1

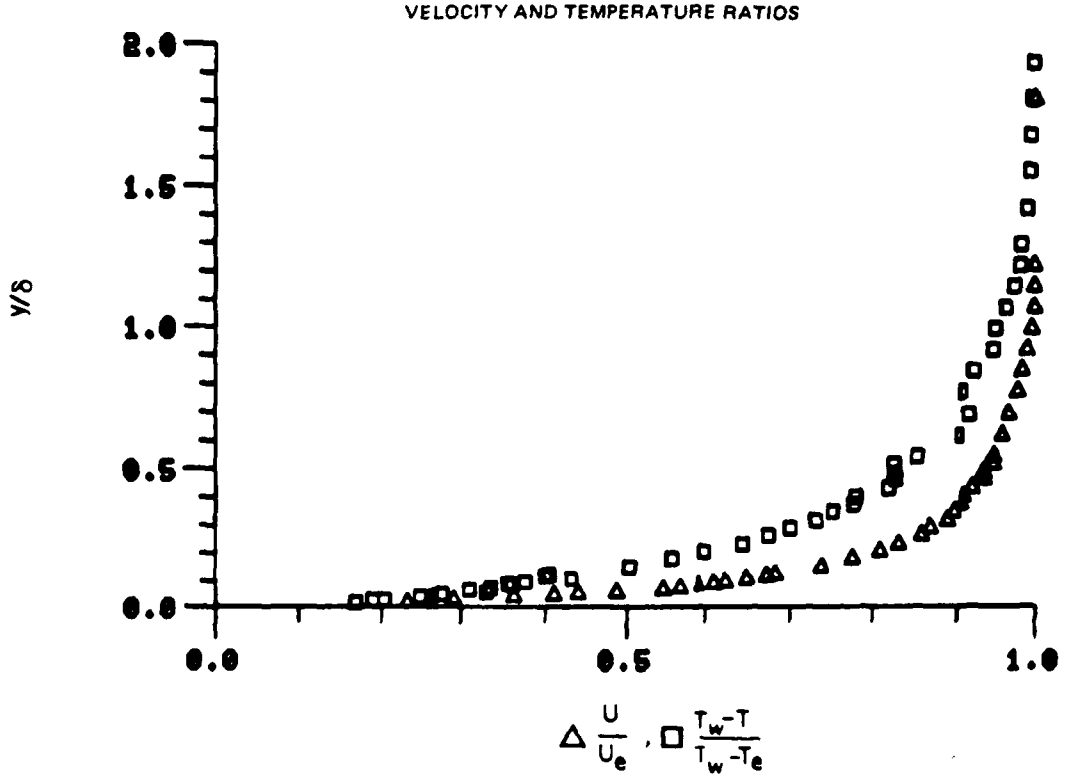


Figure 51. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 16

78-12-100-1

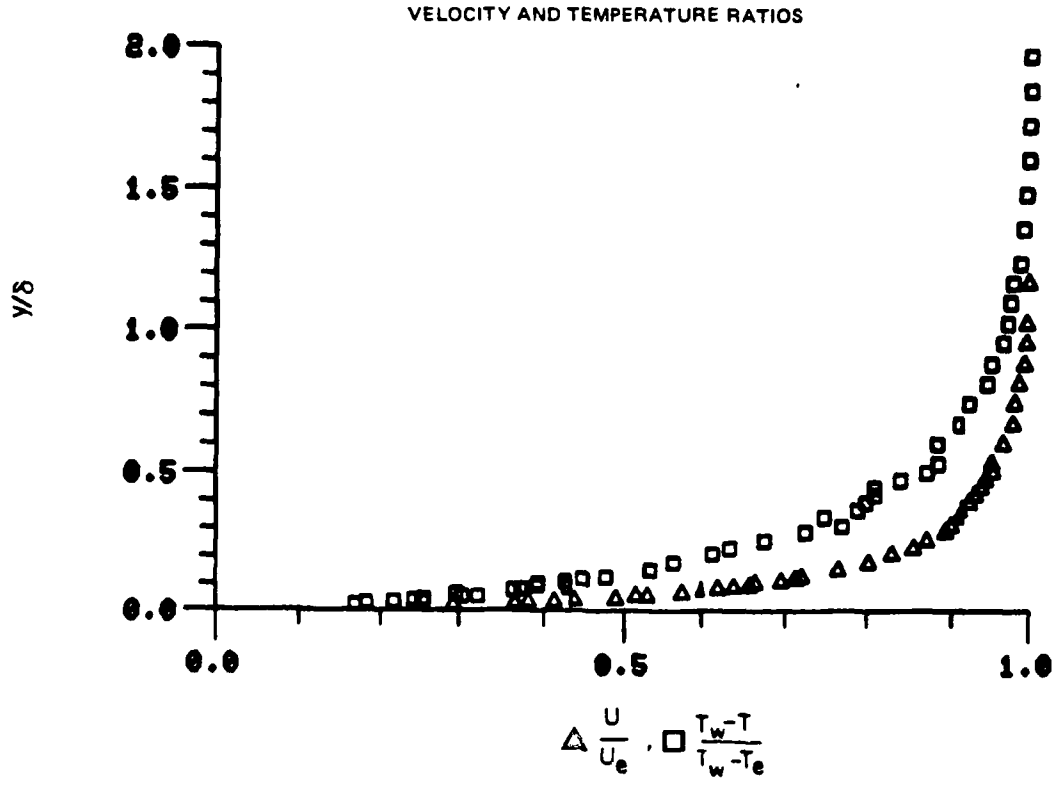
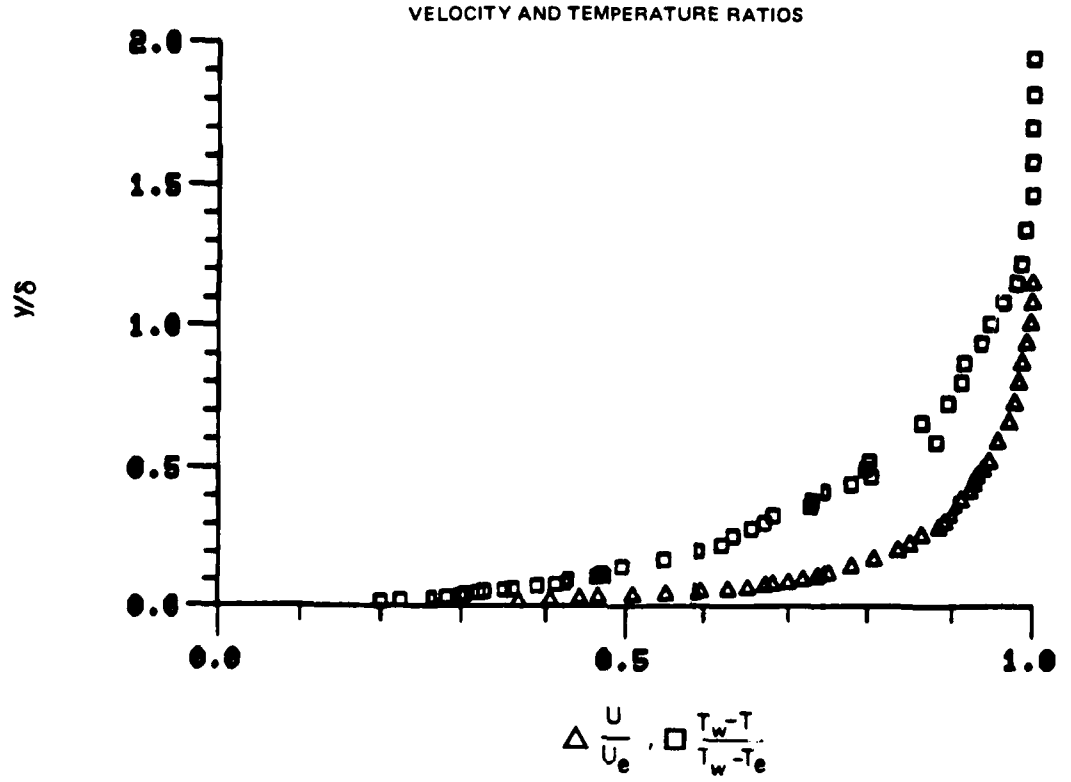


Figure 52. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.17

78-12-100-1



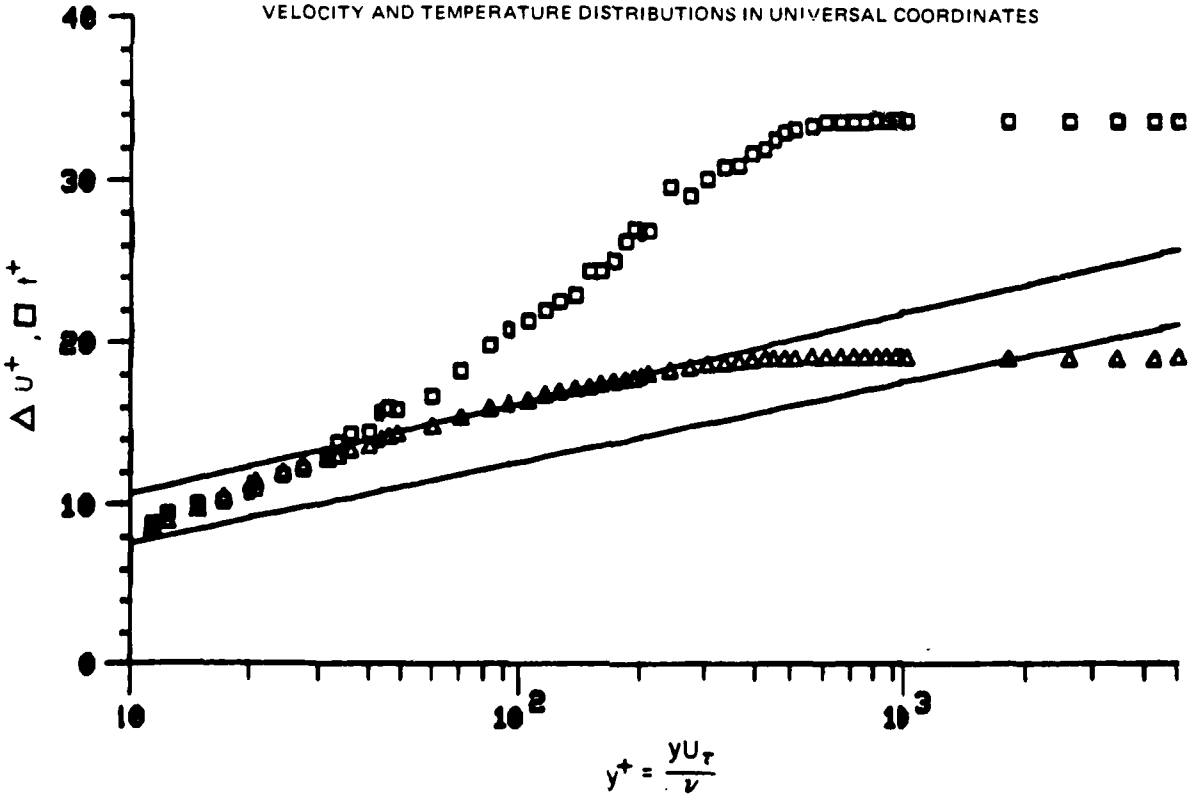
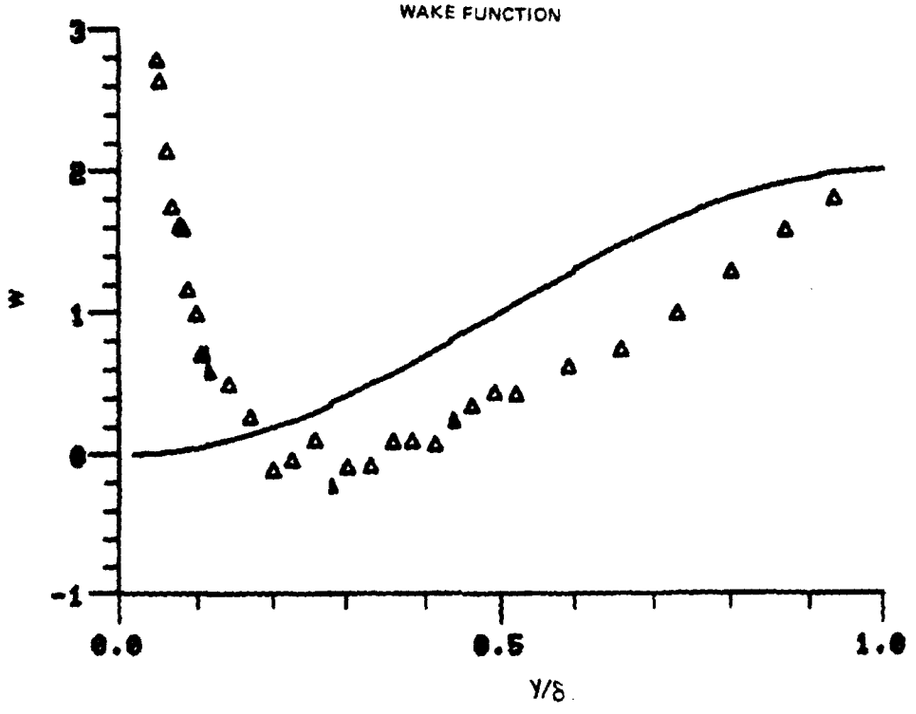


Figure 53. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.19

78-12-100-1



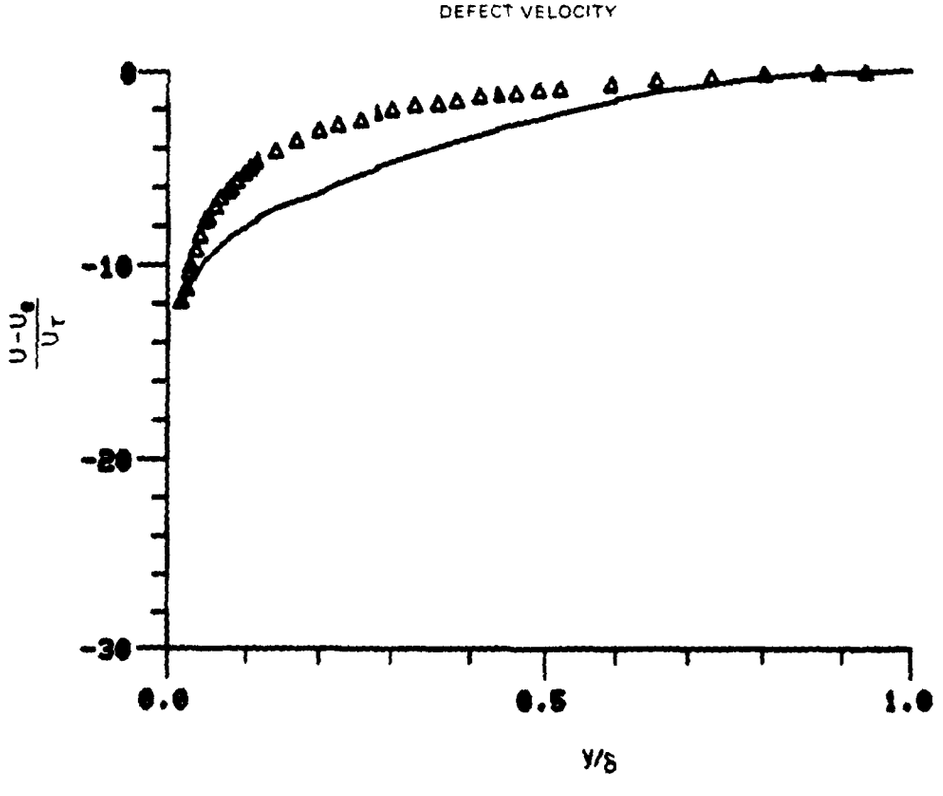
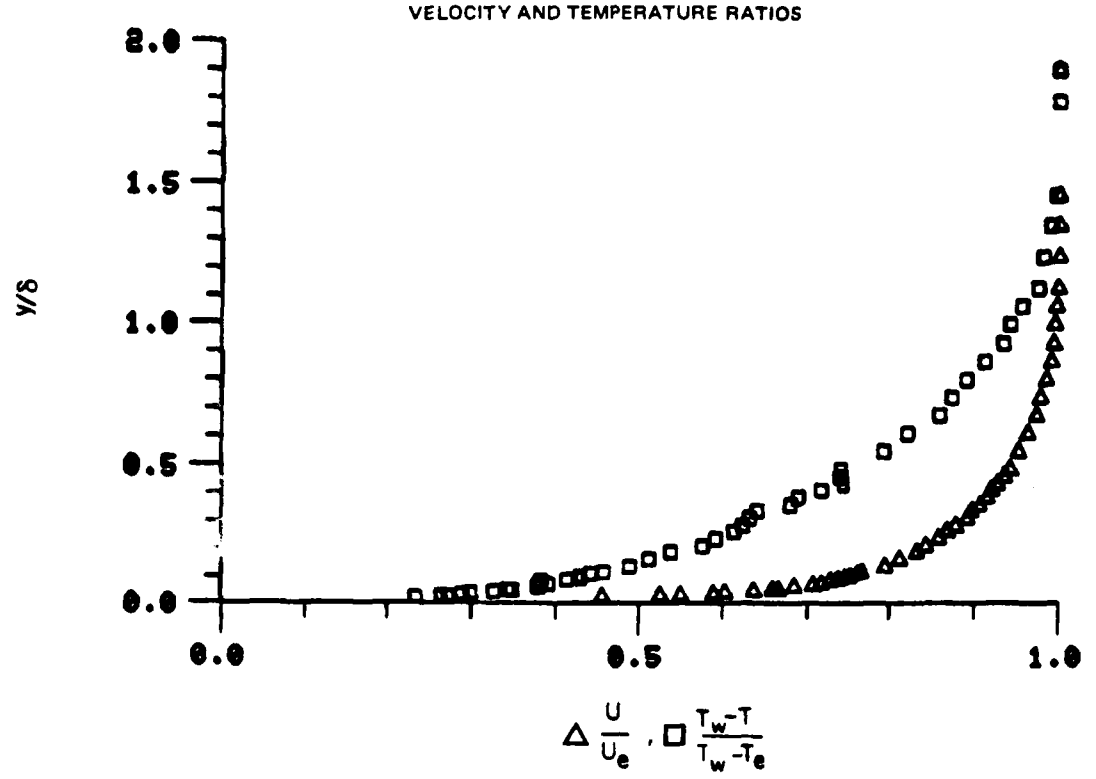


Figure 53. Boundary Layer Velocity Profiles
Run No.3 Point No.19

78-12-100-2



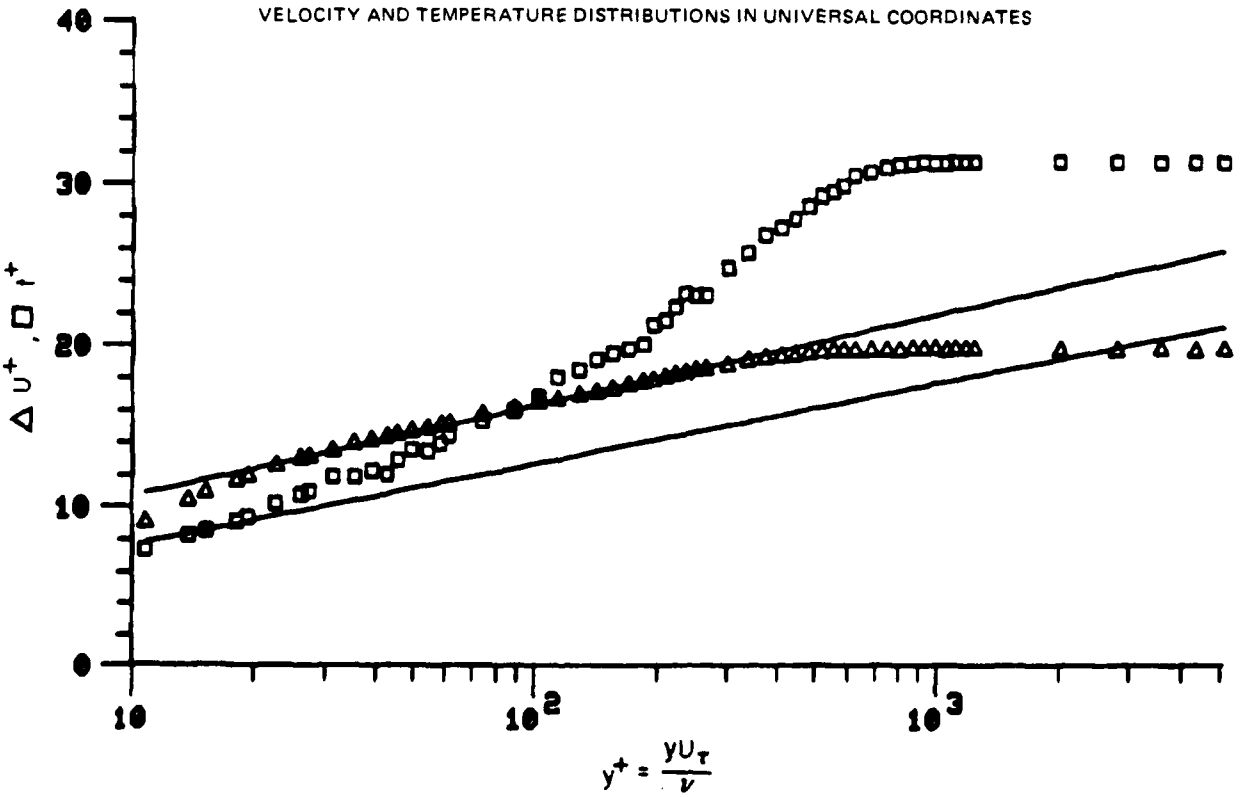


Figure 54. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.20

78-12-100-1

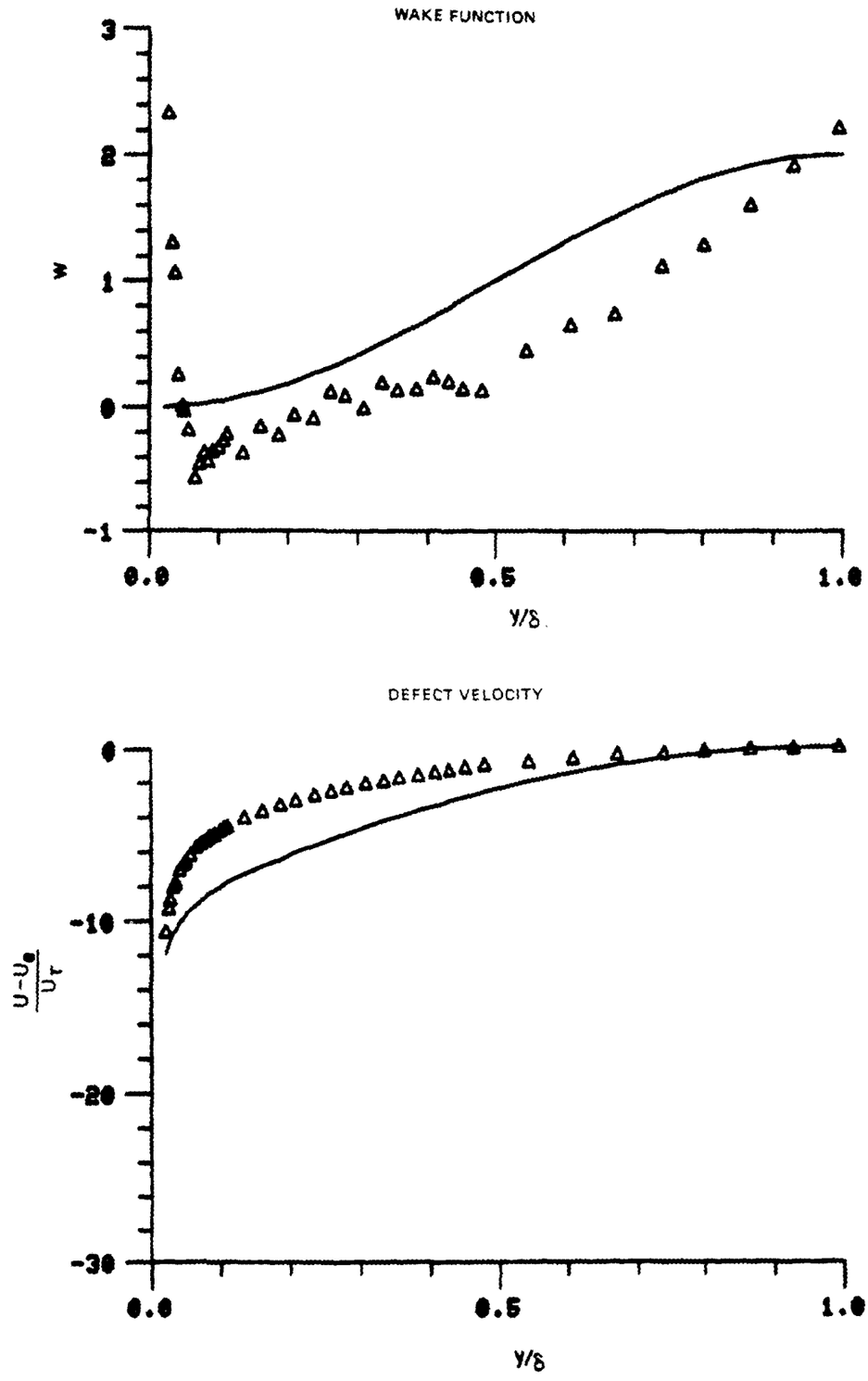
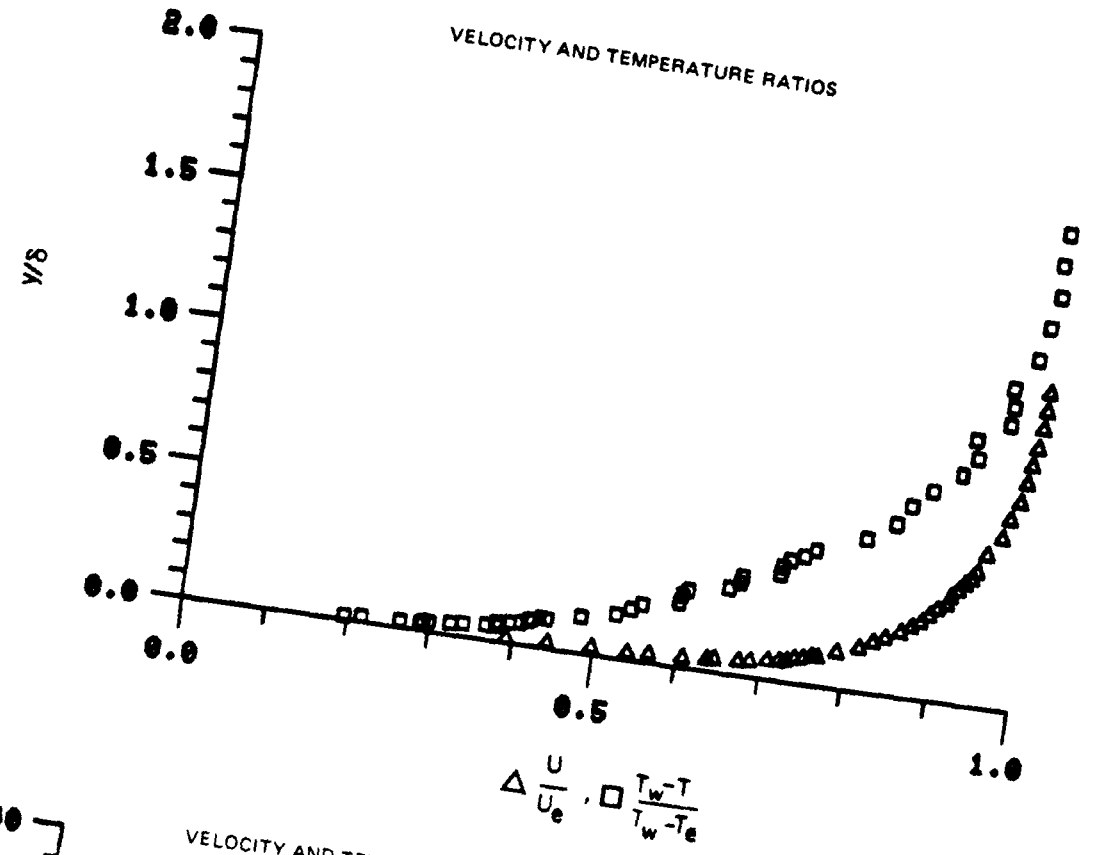


Figure 54. Boundary Layer Velocity Profiles
Run No.3 Point No.20

78-12-100-2



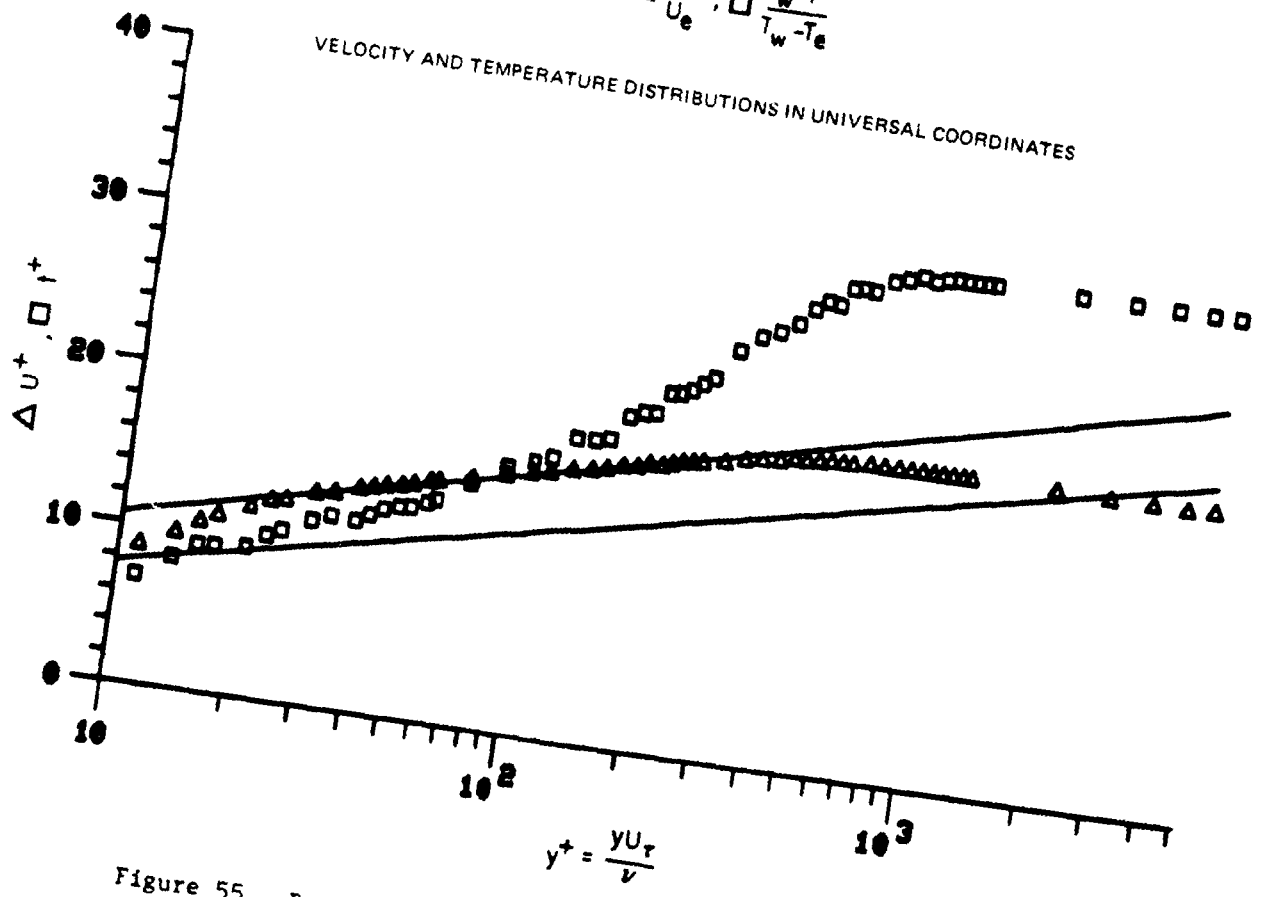
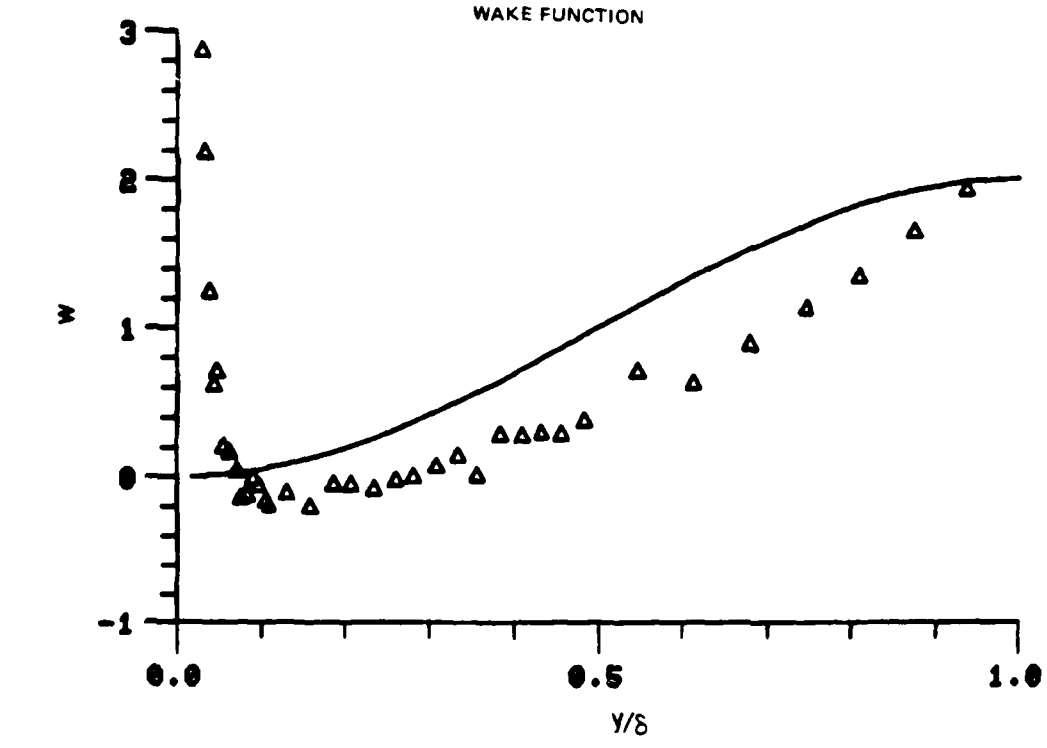


Figure 55. Boundary Layer Velocity and Temperature Profiles
Run No.3 Point No.21

78-12-100-1



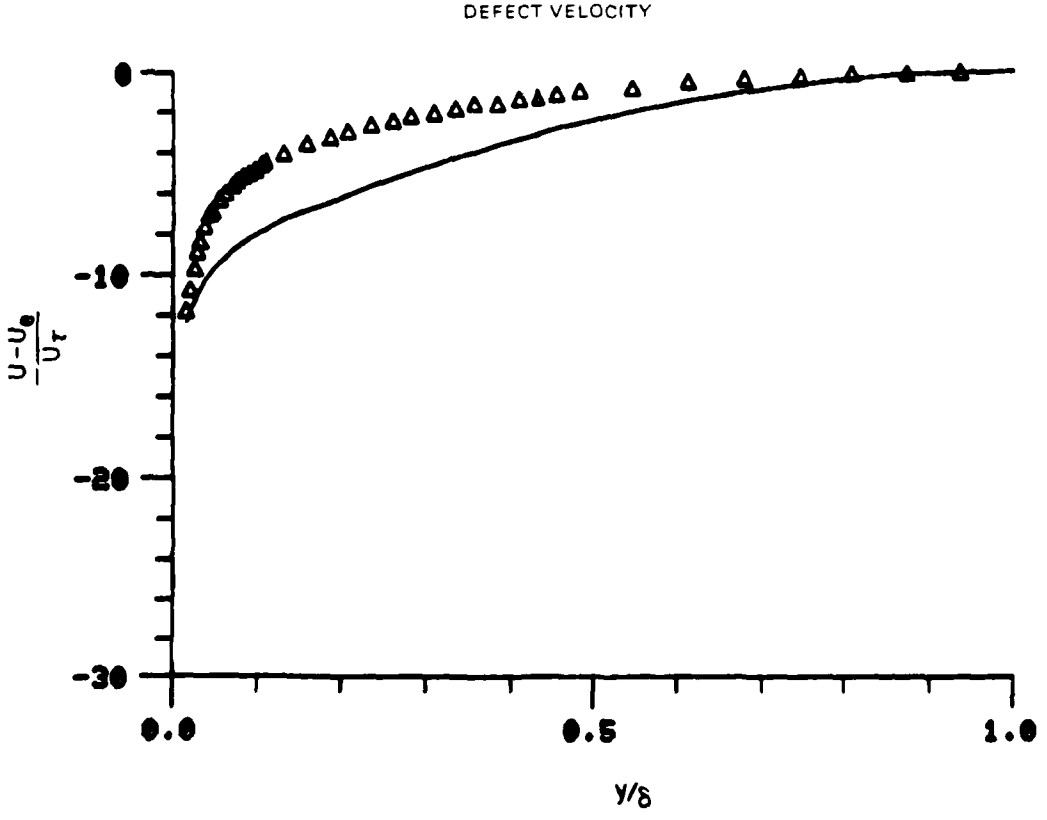
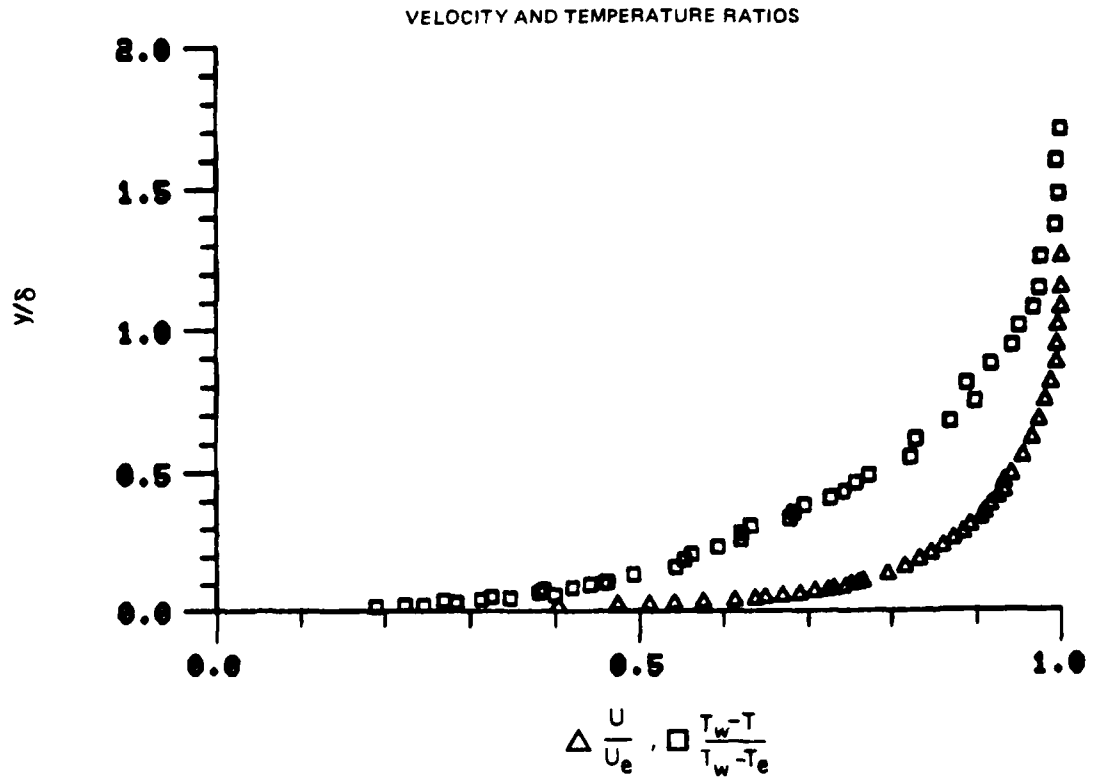


Figure 55. Boundary Layer Velocity Profiles
Run No.3 Point No. 21

78-12-100-2



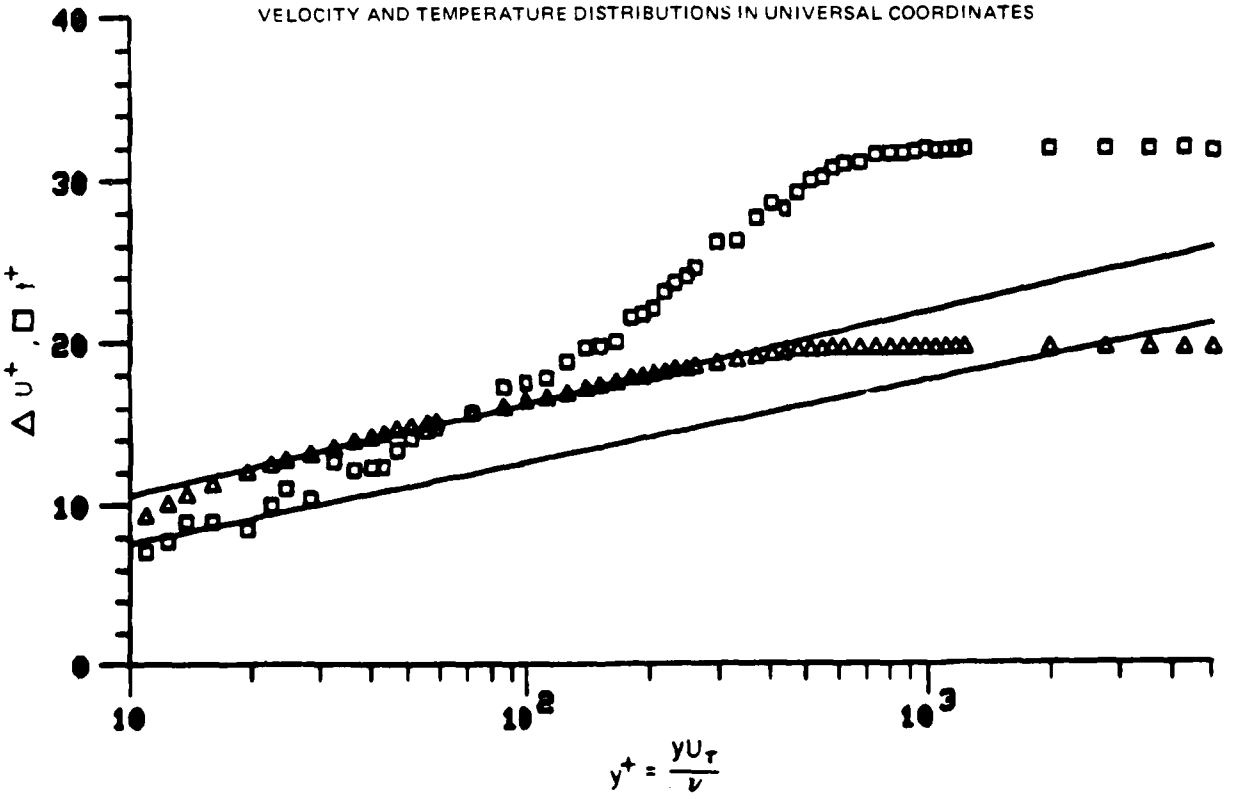
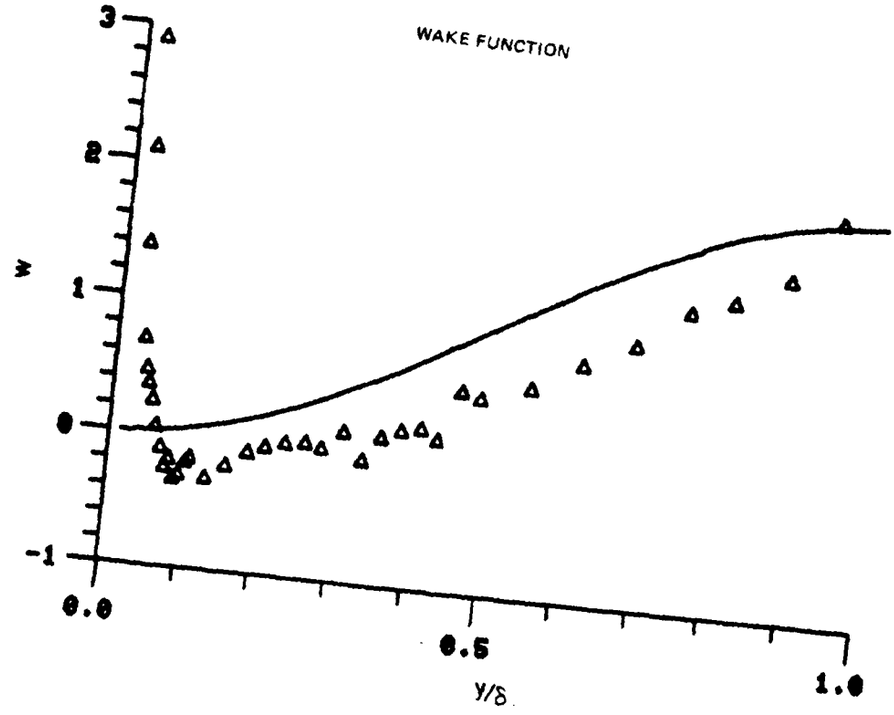


Figure 56. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 22

78-12-100-1



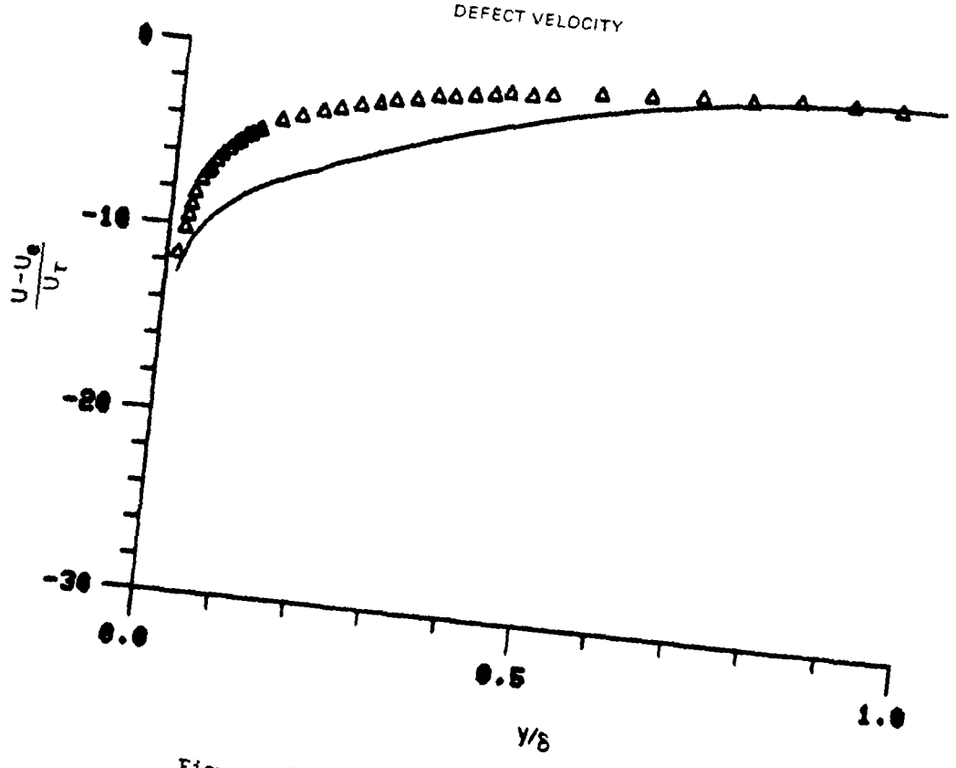
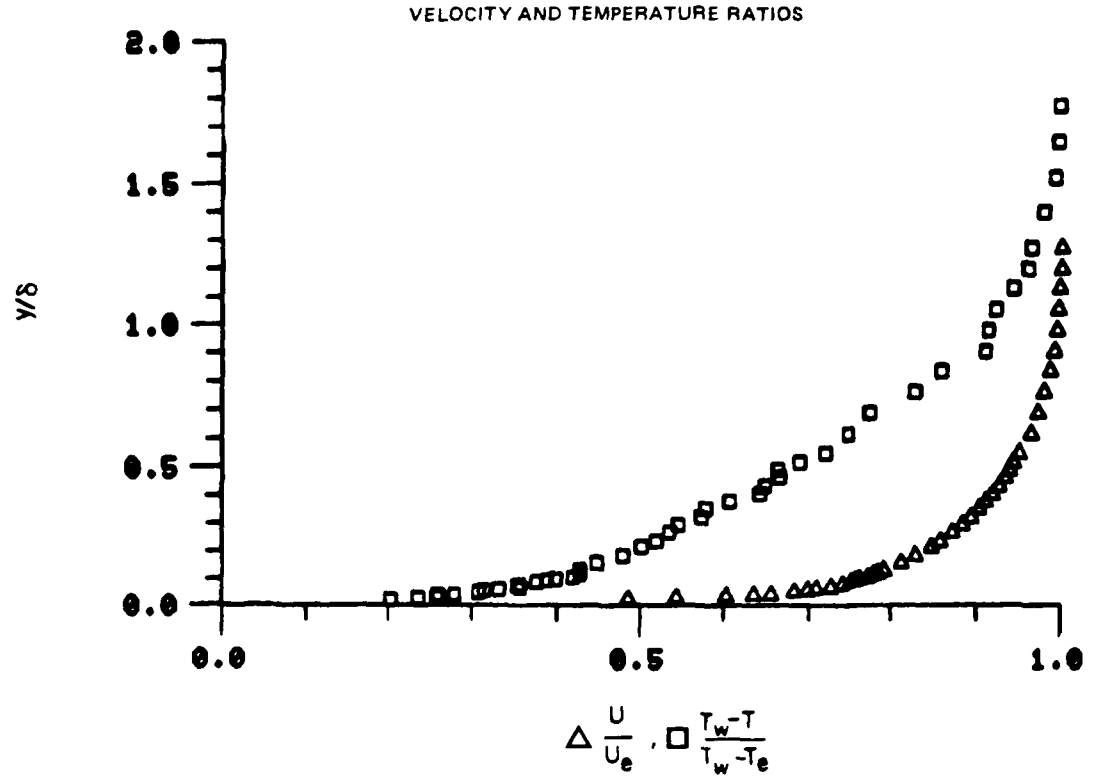


Figure 56. Boundary Layer Velocity Profiles
Run No.3 Point No. 22



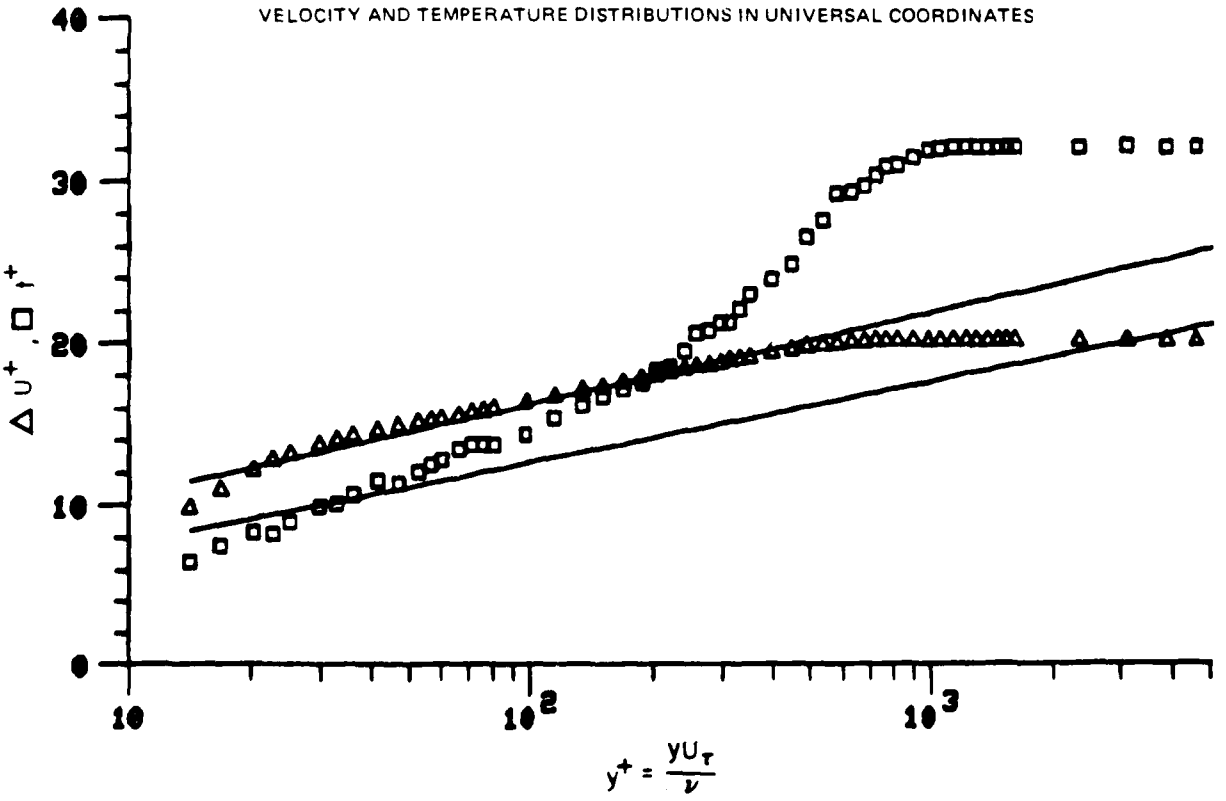
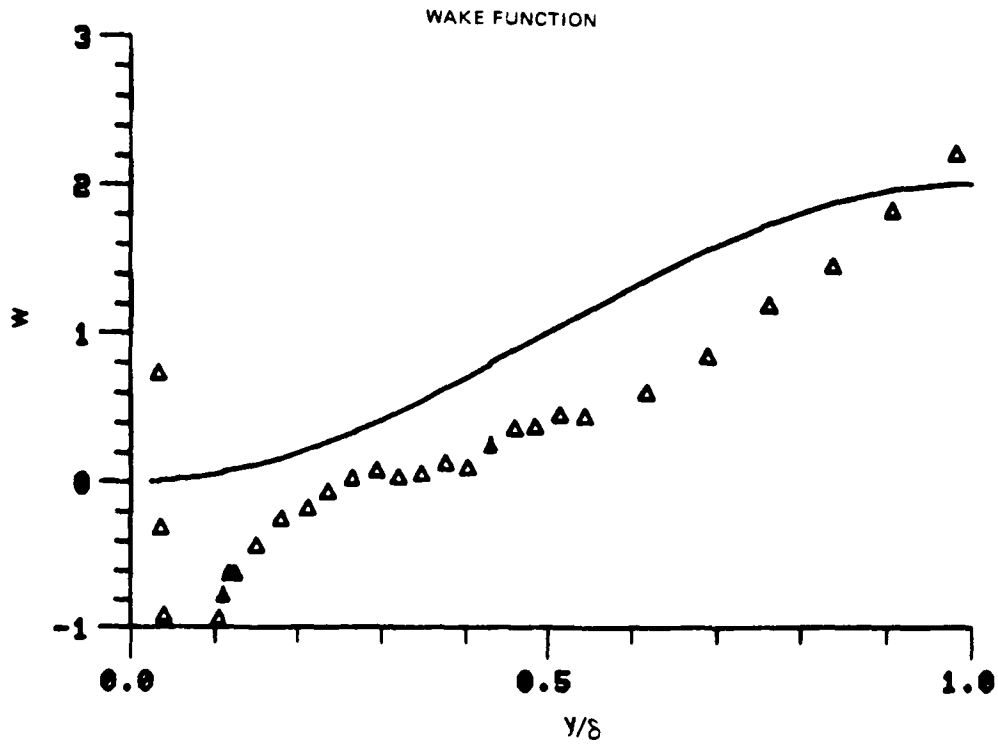


Figure 57. Boundary Layer Velocity and Temperature Profiles
Run No. 3 Point No. 23

78-12-100-1



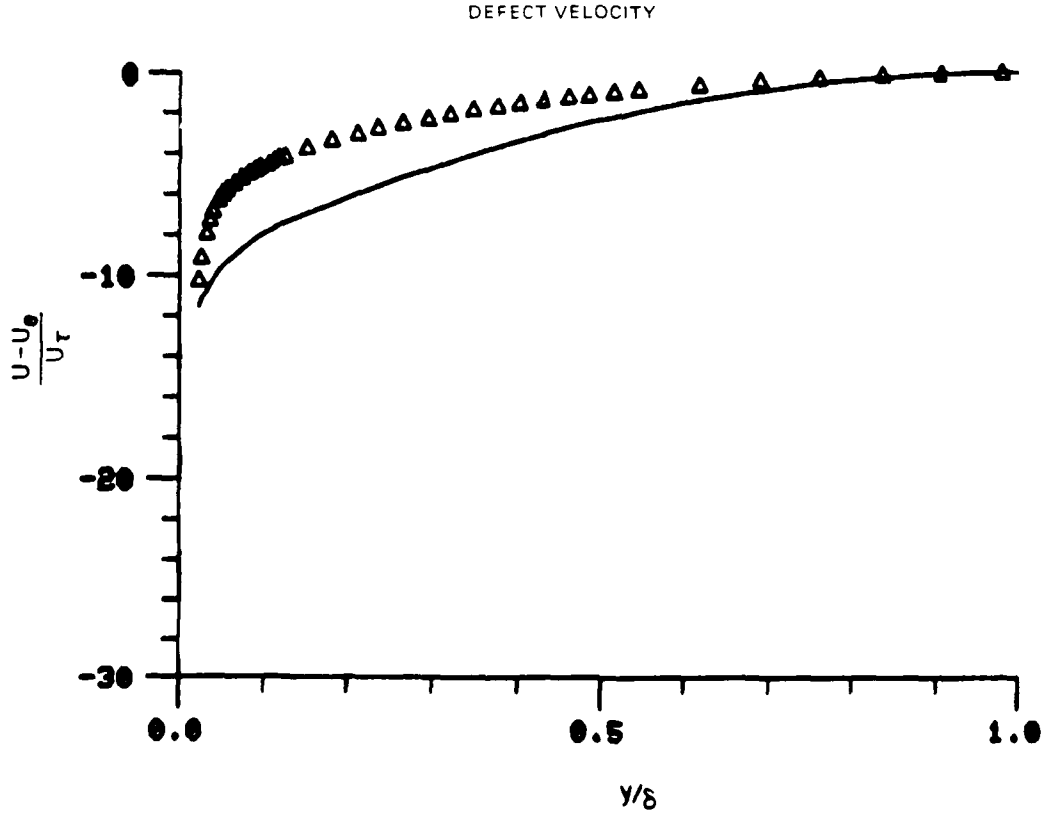


Figure 57. Boundary Layer Velocity Profiles
Run No.3 Point No.23

78-12-100-2

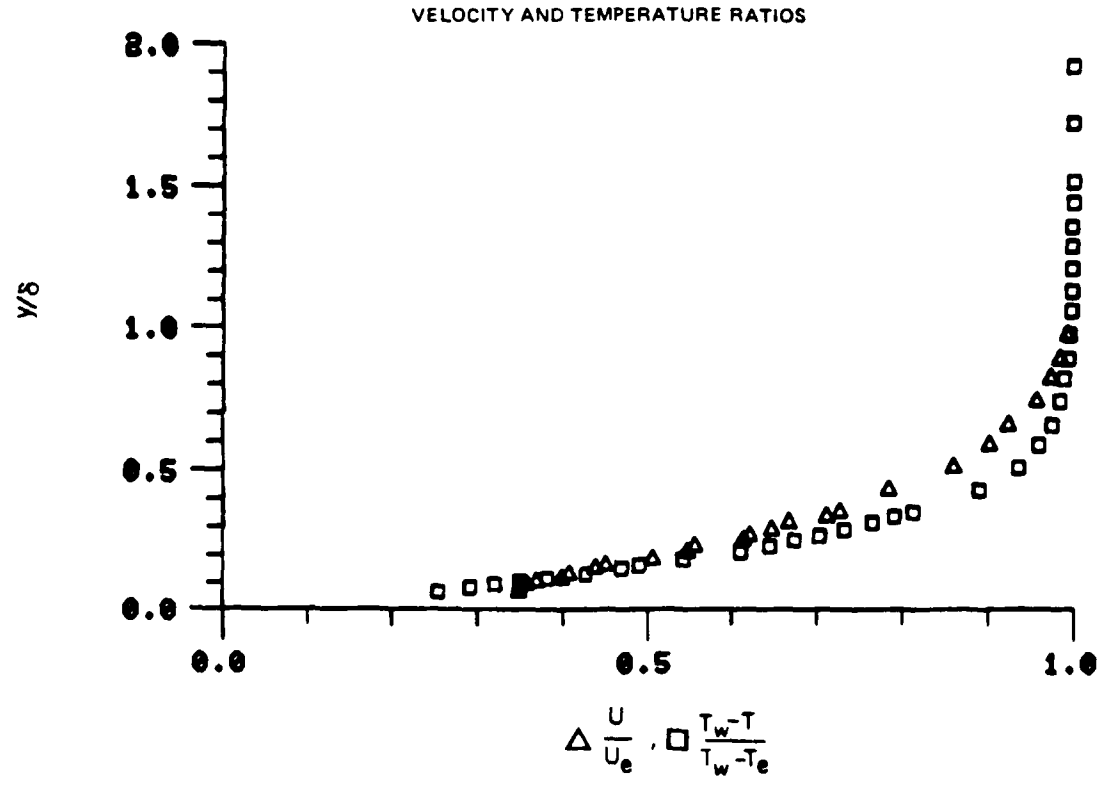


Figure 58. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No. 19

78-12-100-1

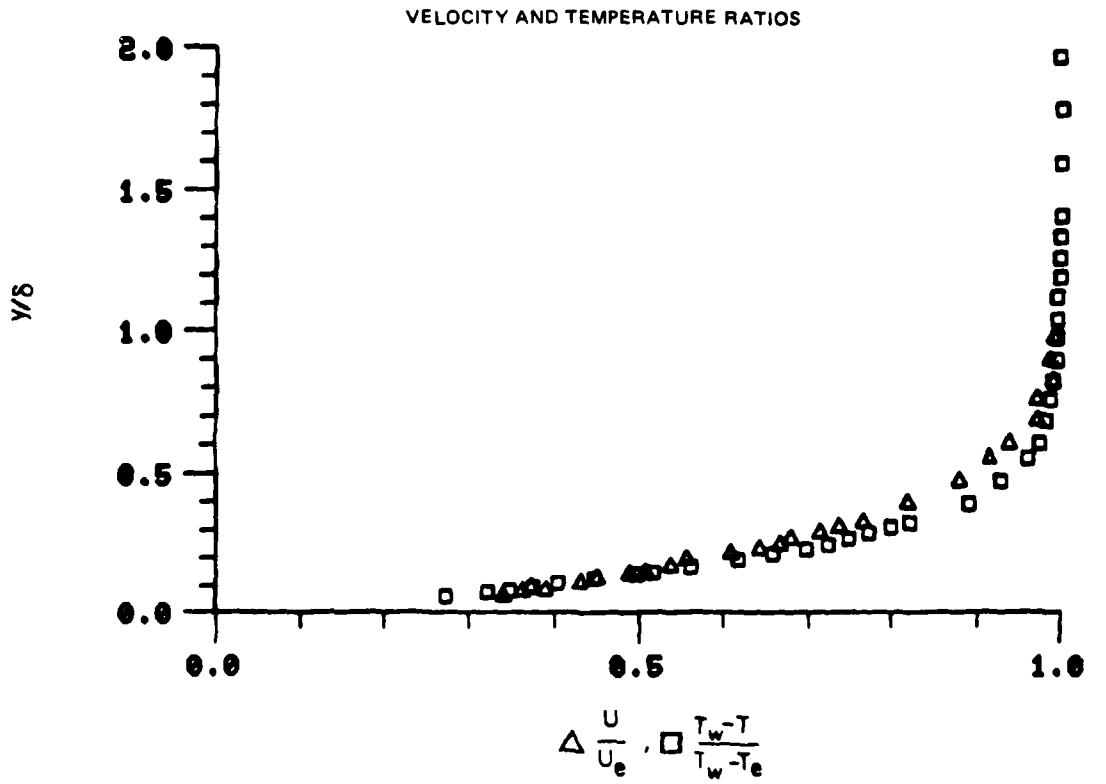


Figure 59. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No. 20

78-12-100-1

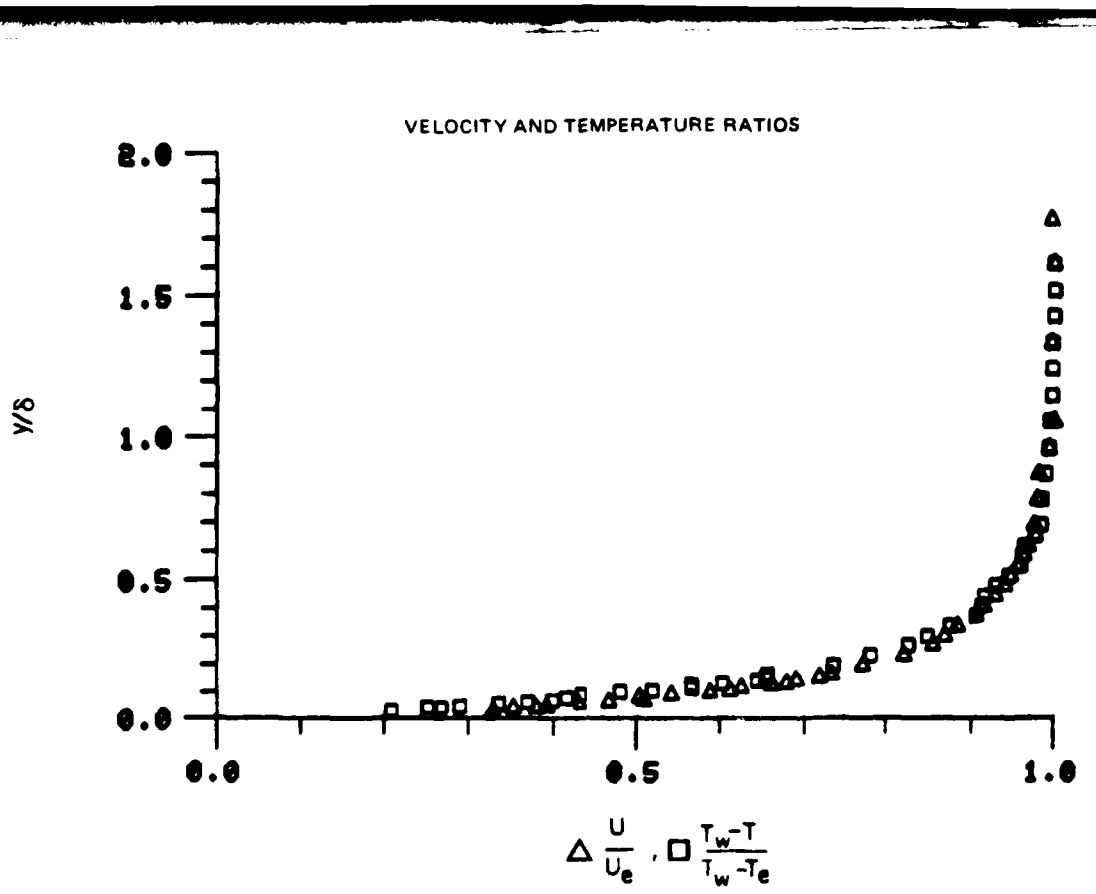


Figure 60. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 15

78-12-100-1

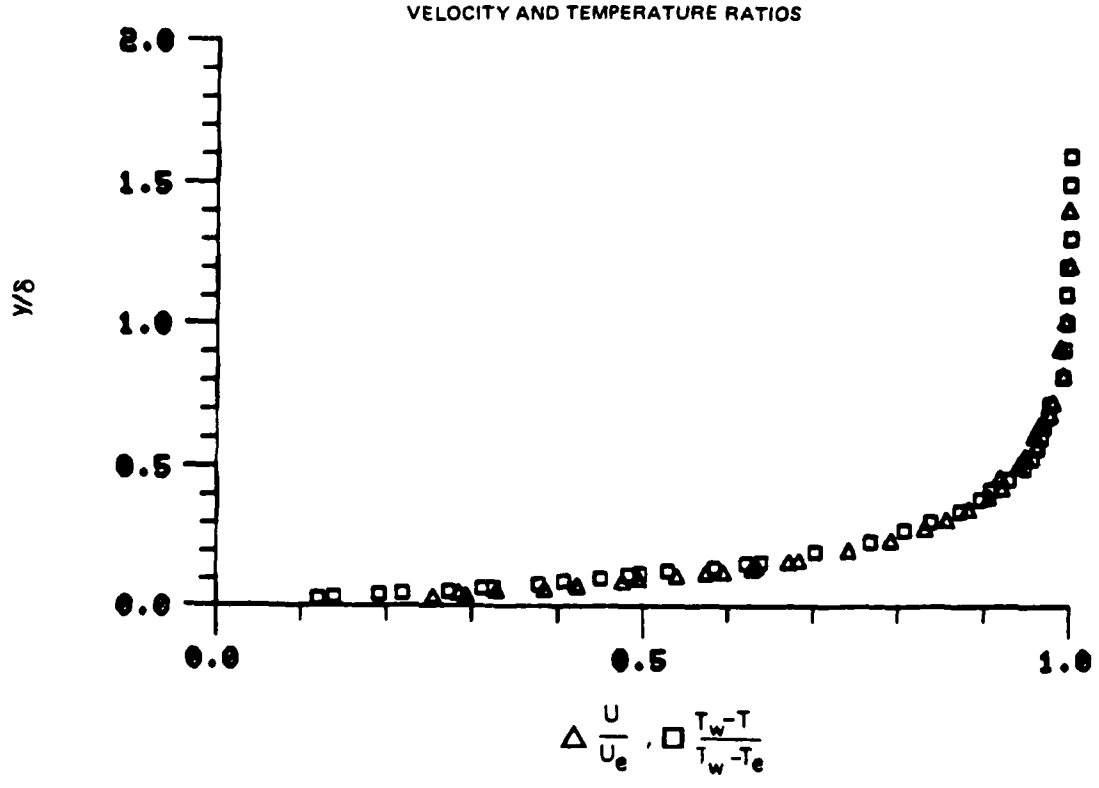


Figure 61. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 16

78-12-100-1

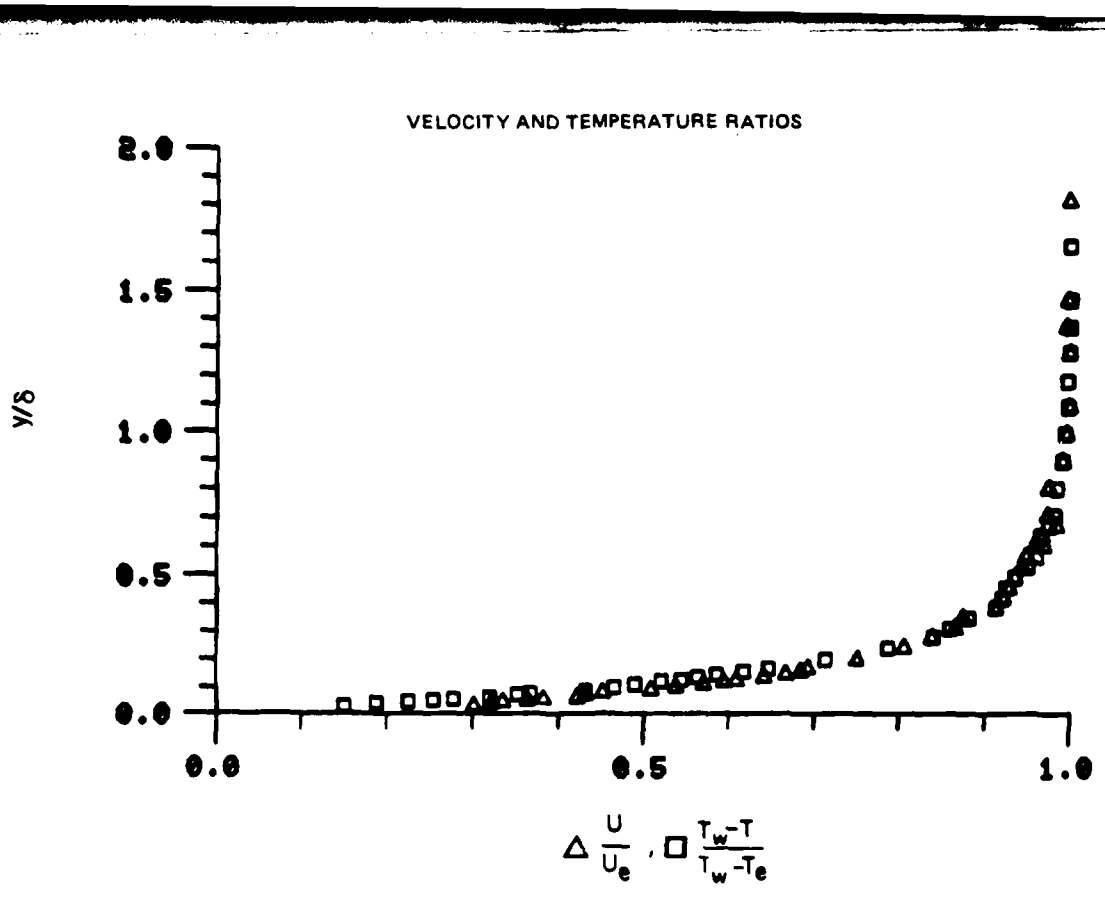


Figure 62. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No.17

78-12-100-1

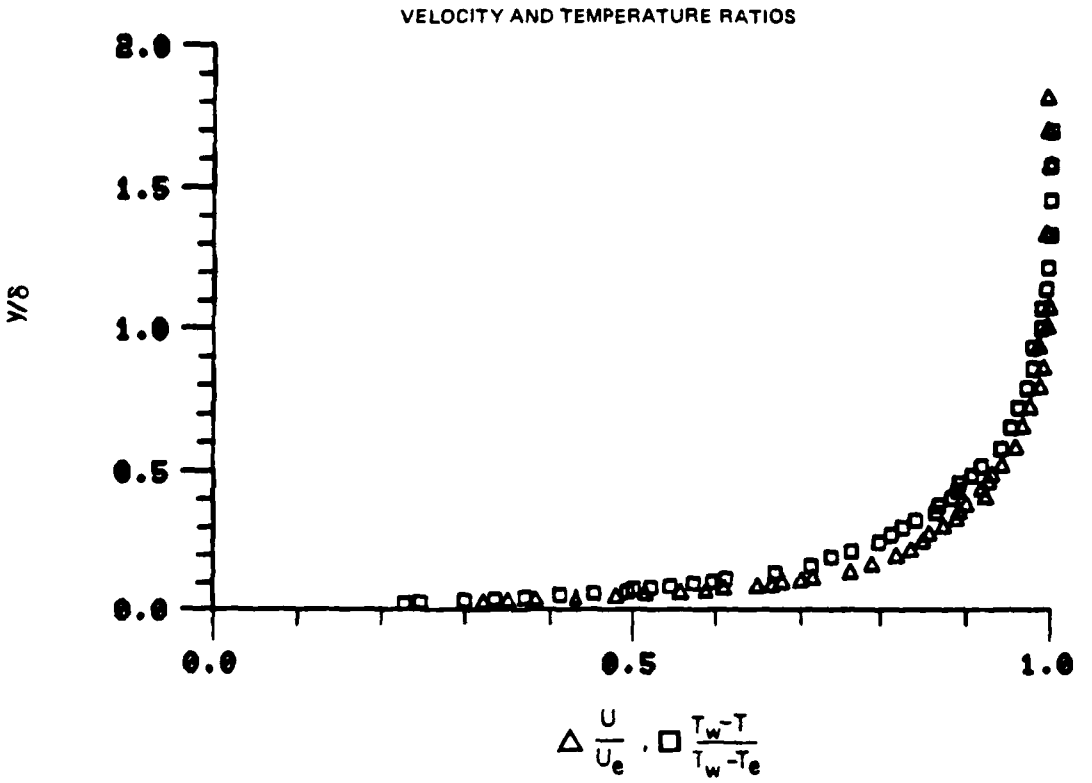


Figure 63. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 12

78-12-100-1

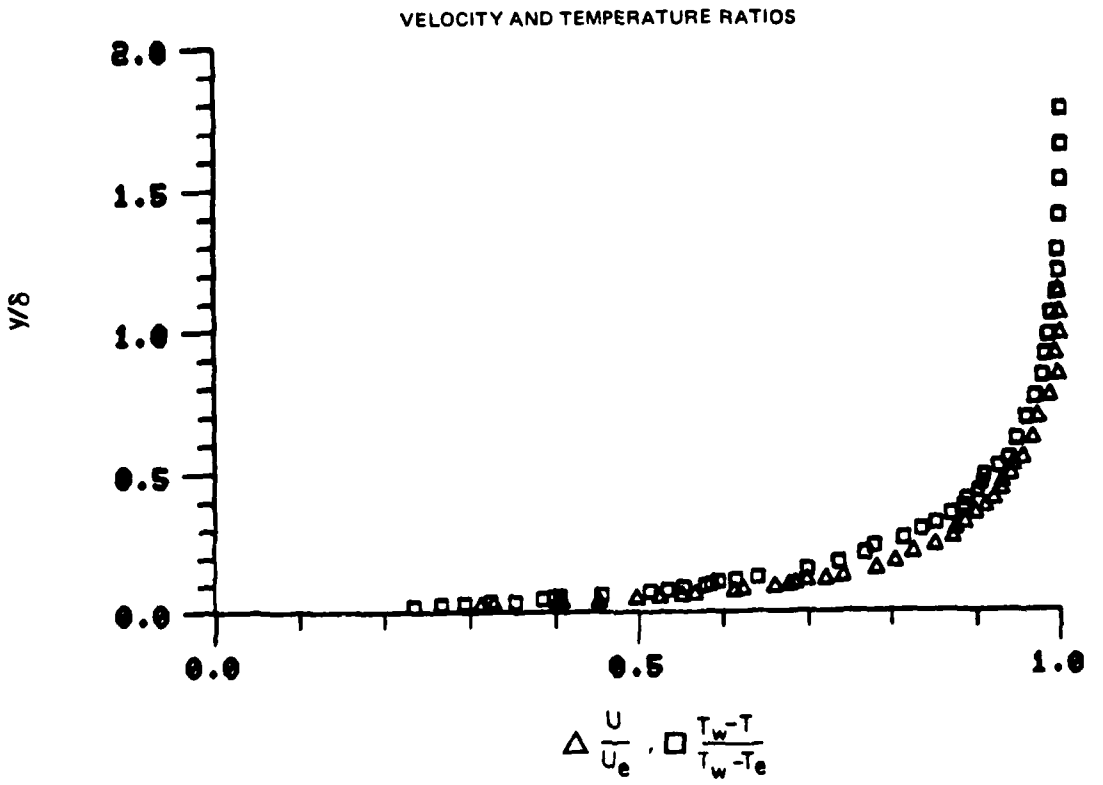


Figure 64. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 13

78-12-100-1

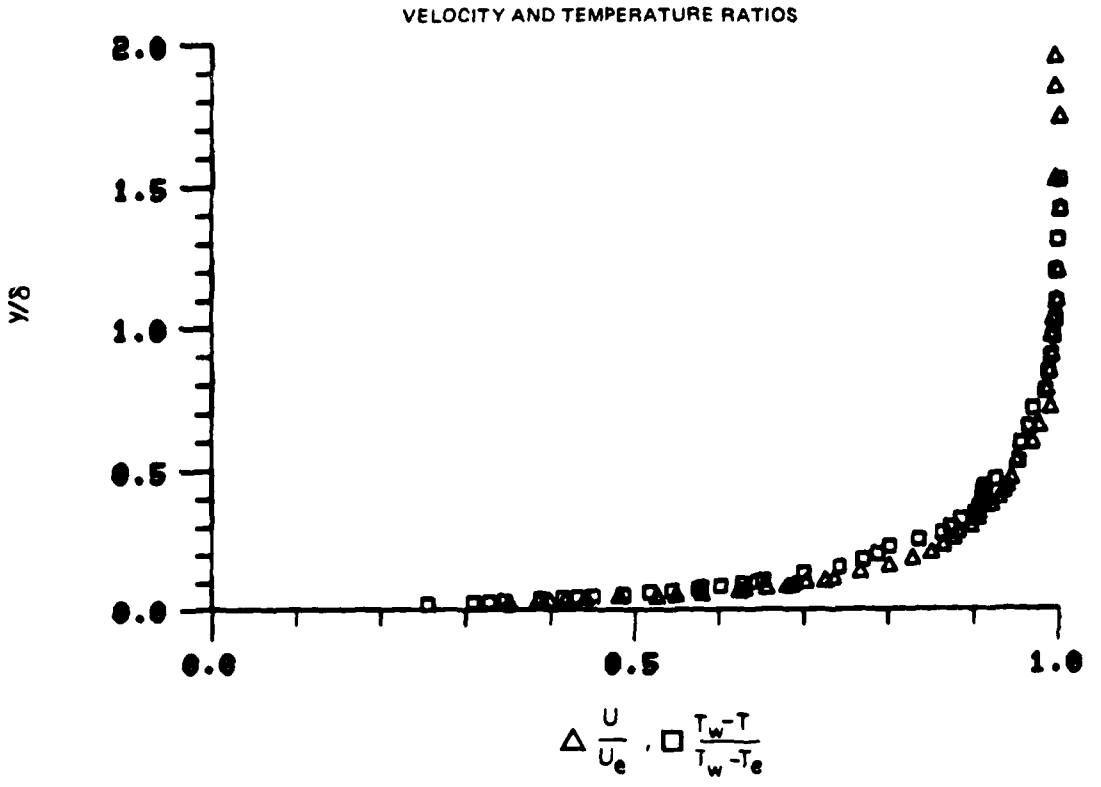
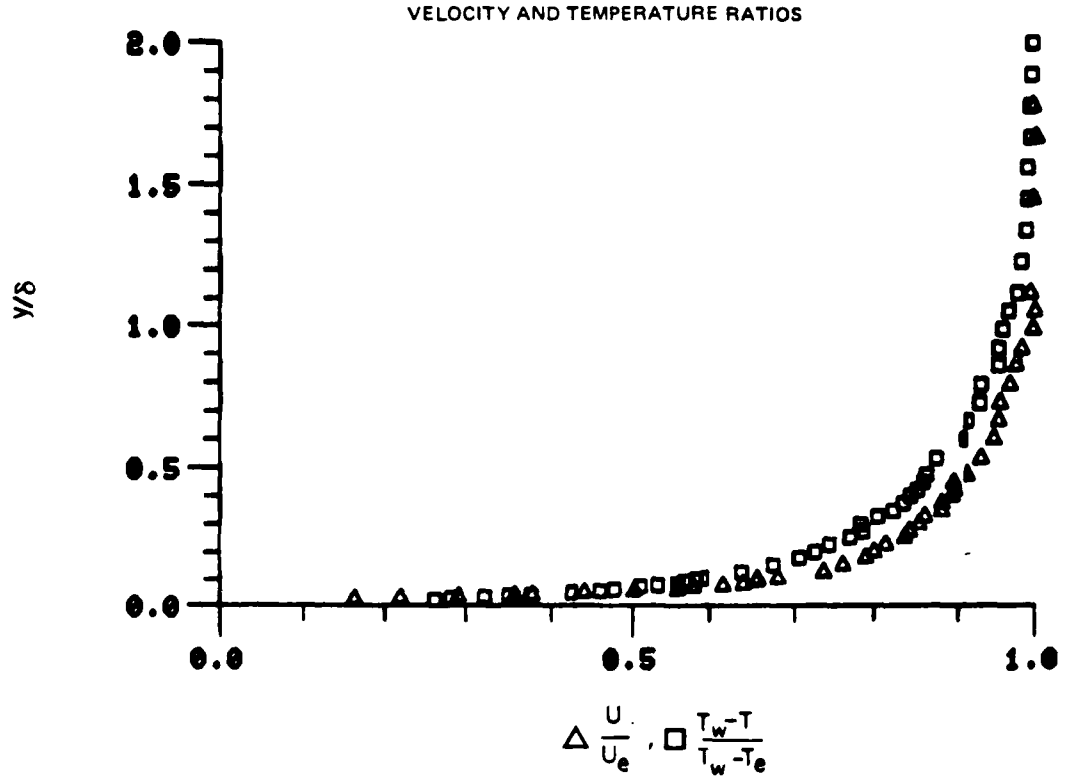


Figure 65. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No. 14

78-12-100-1



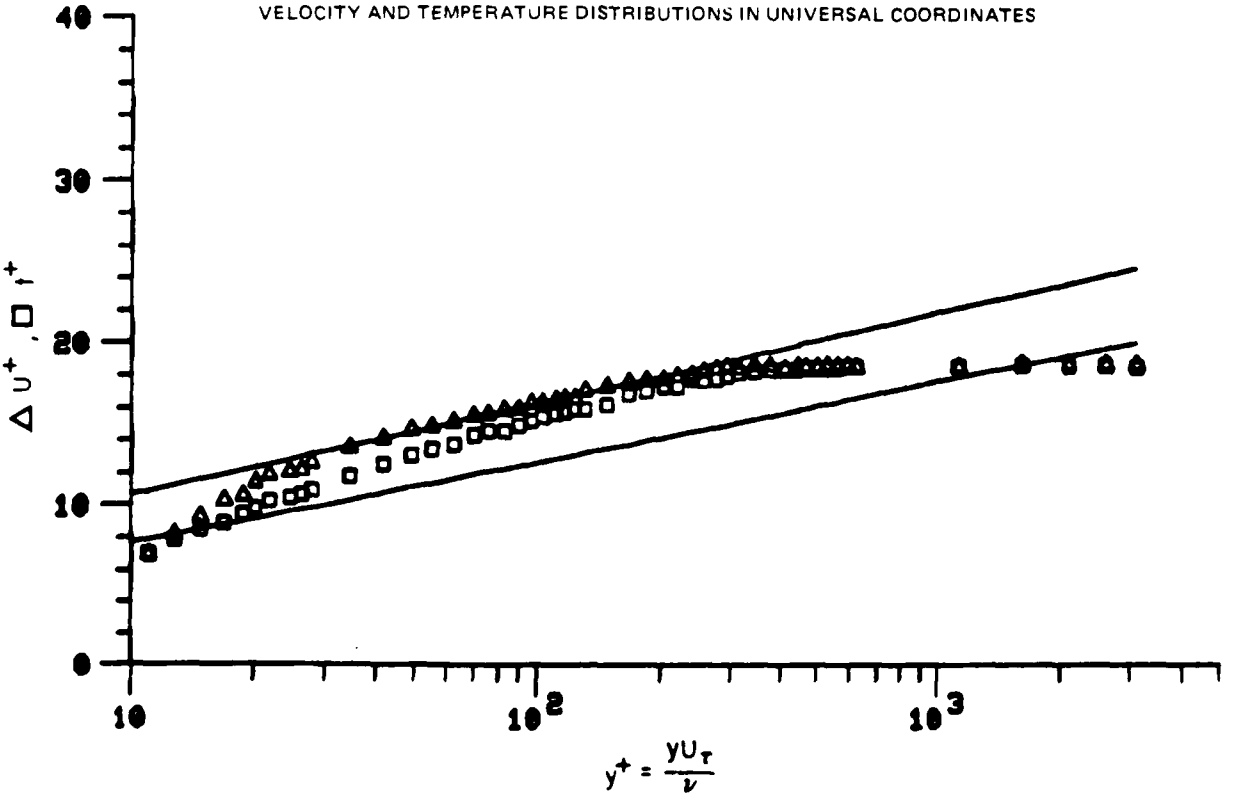


Figure 66. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 10

78-12-100-1

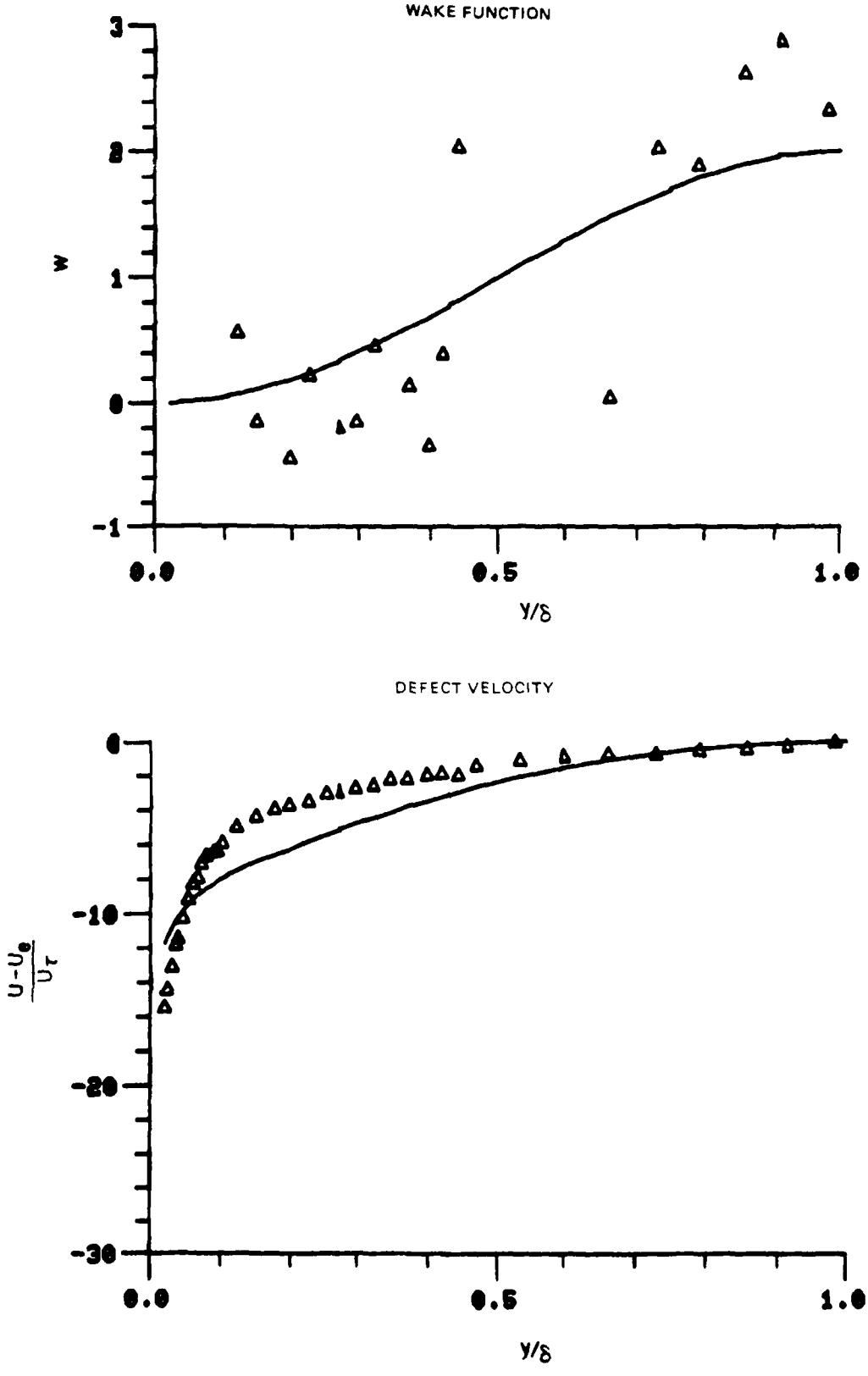
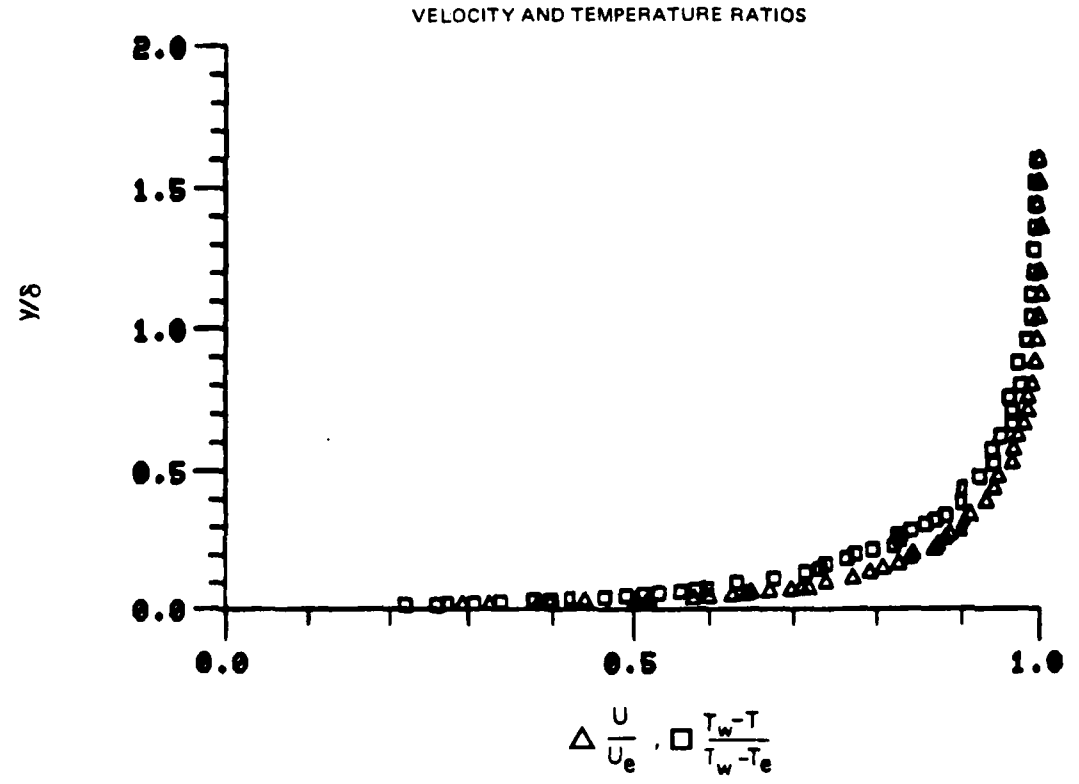


Figure 66. Boundary Layer Velocity Profiles
Run No. 4 Point No. 10

78-12-100-2



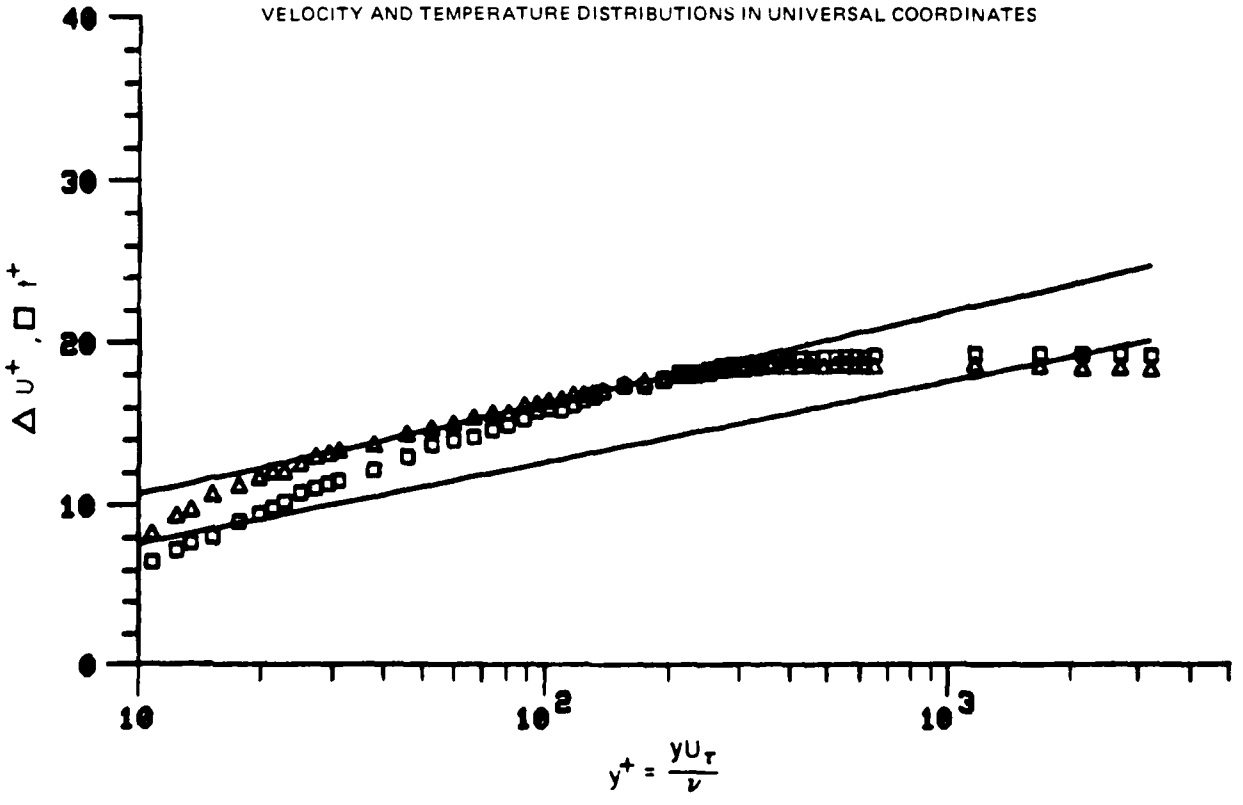
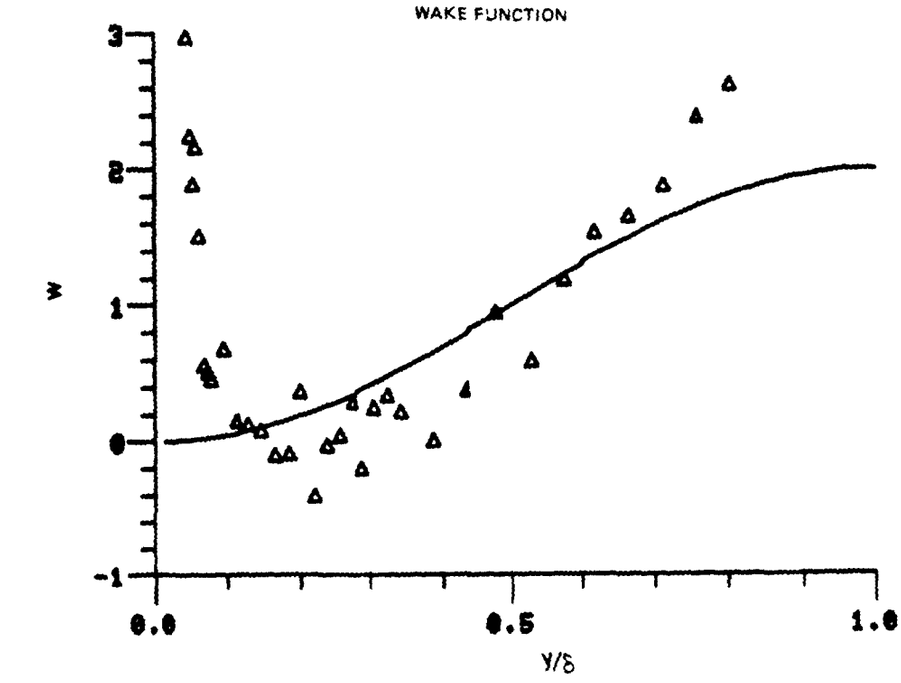


Figure 67. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 11

78-12-100-1



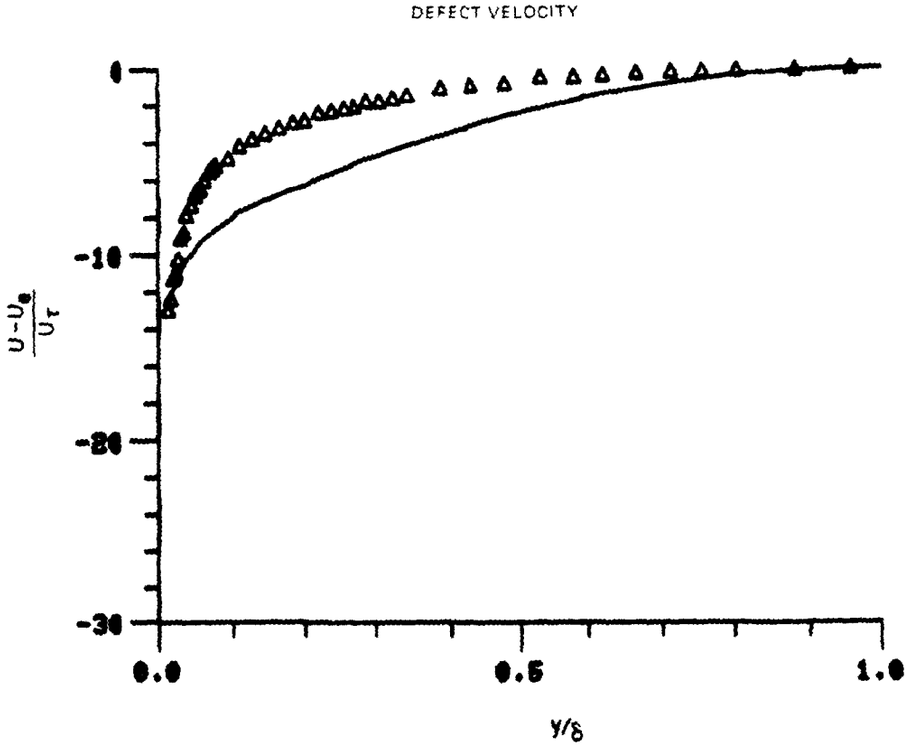


Figure 67. Boundary Layer Velocity Profiles
Run No. 4 Point No. 11

78-12-100-2

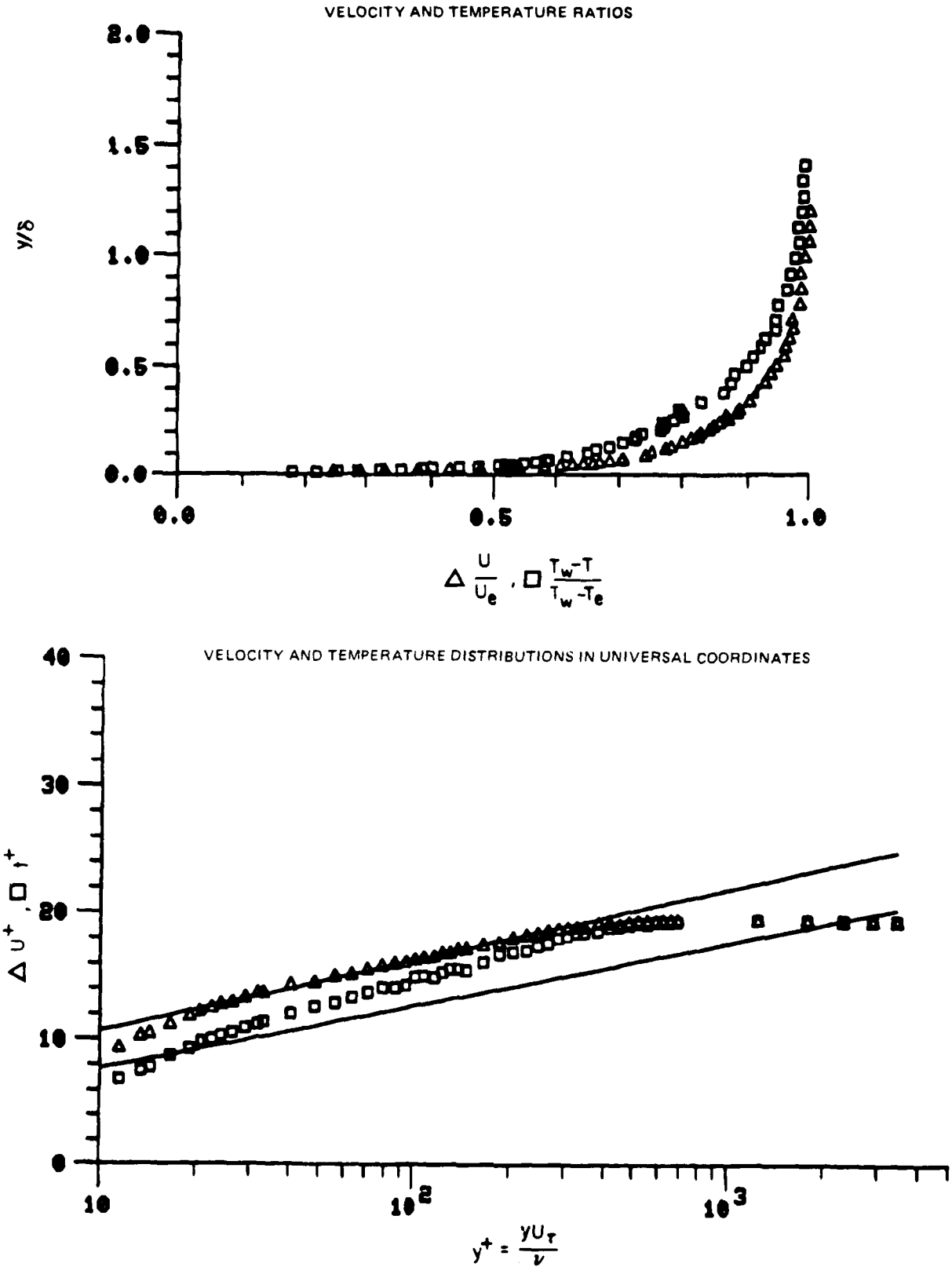
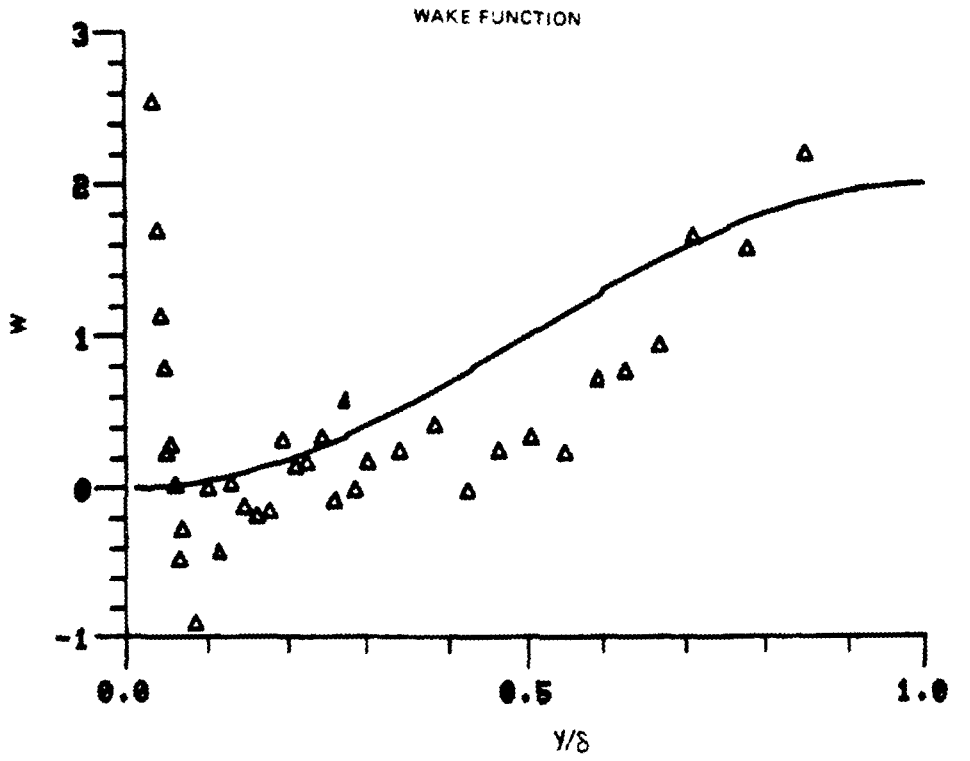


Figure 68. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 9

78-12-100-1



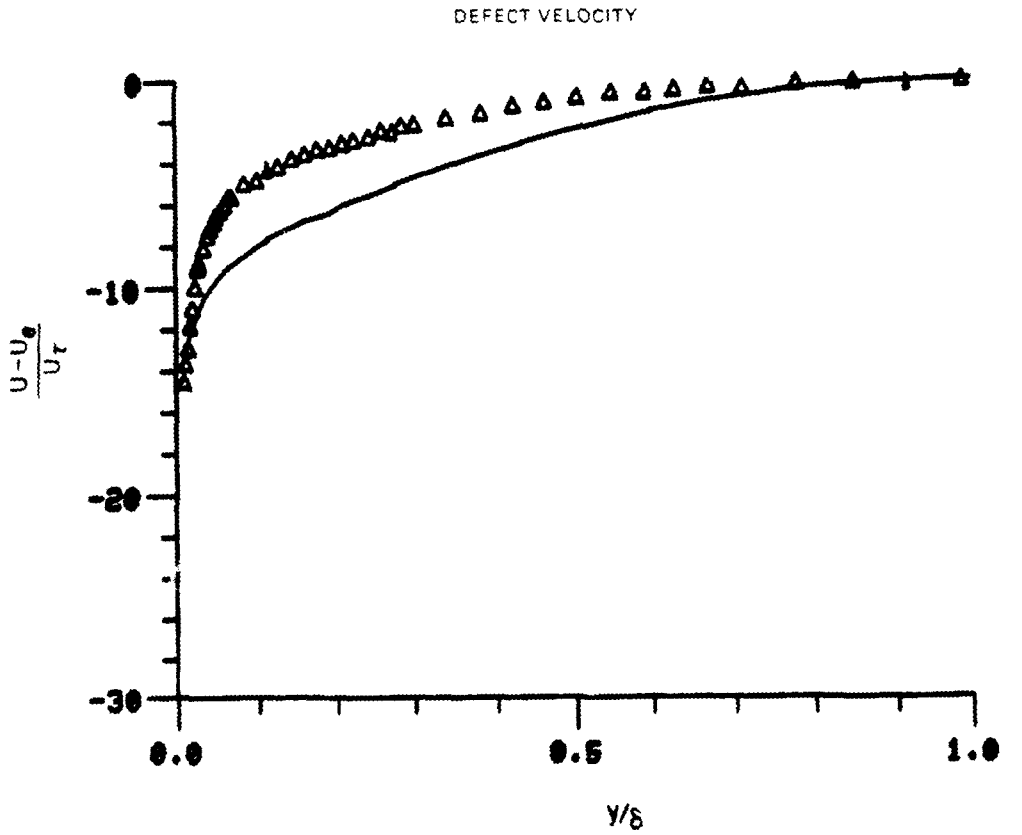
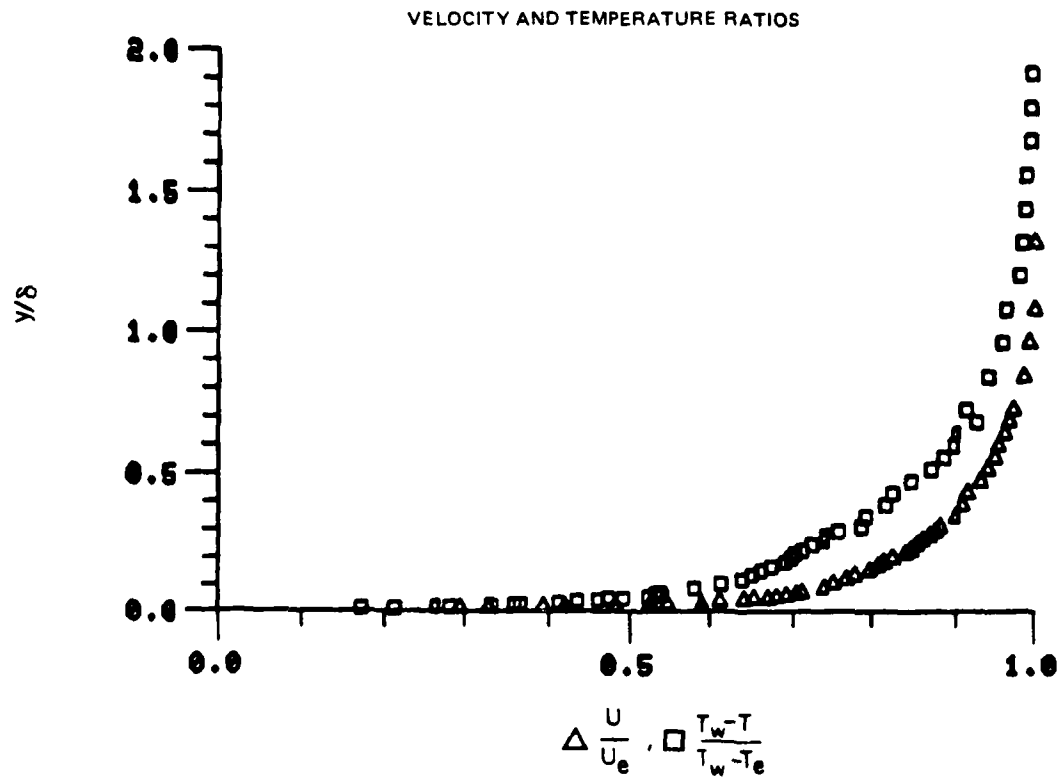


Figure 68. Boundary Layer Velocity Profiles
Run No.4 Point No. 9

78-12-100-2



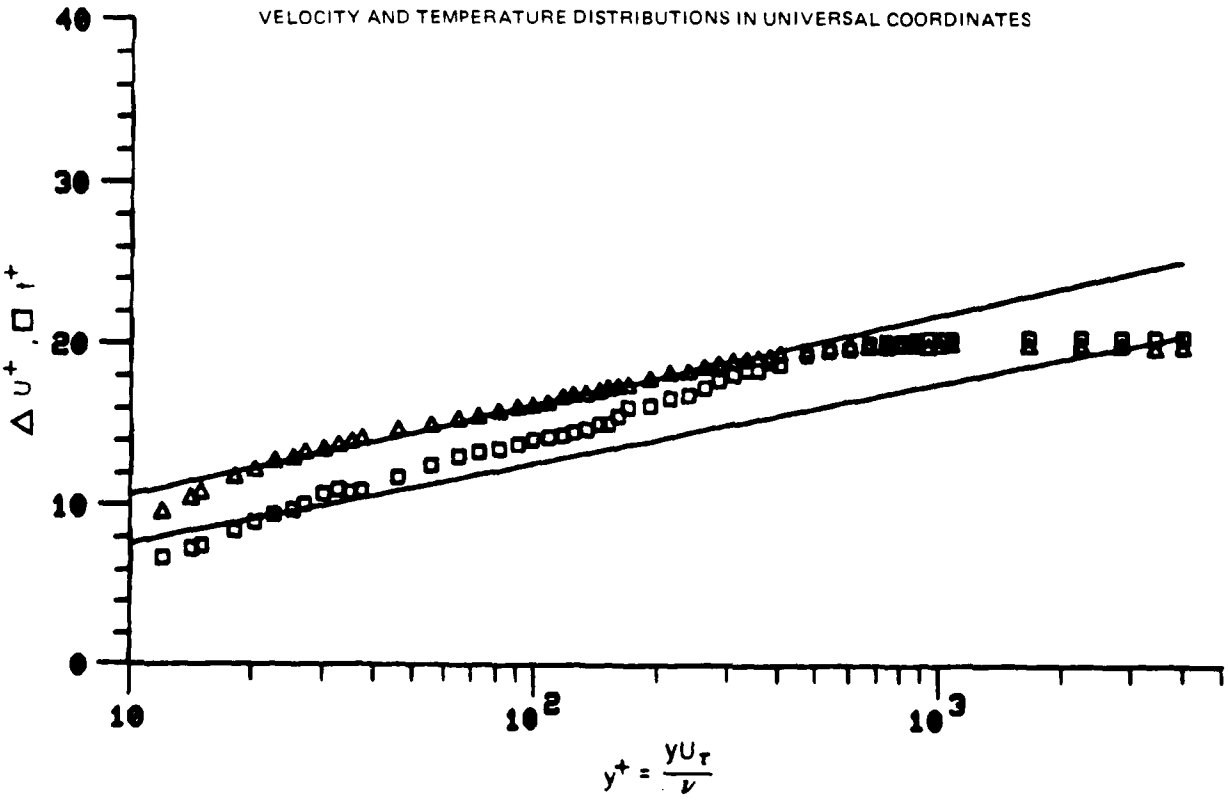


Figure 69. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No.6

78-12-100-1

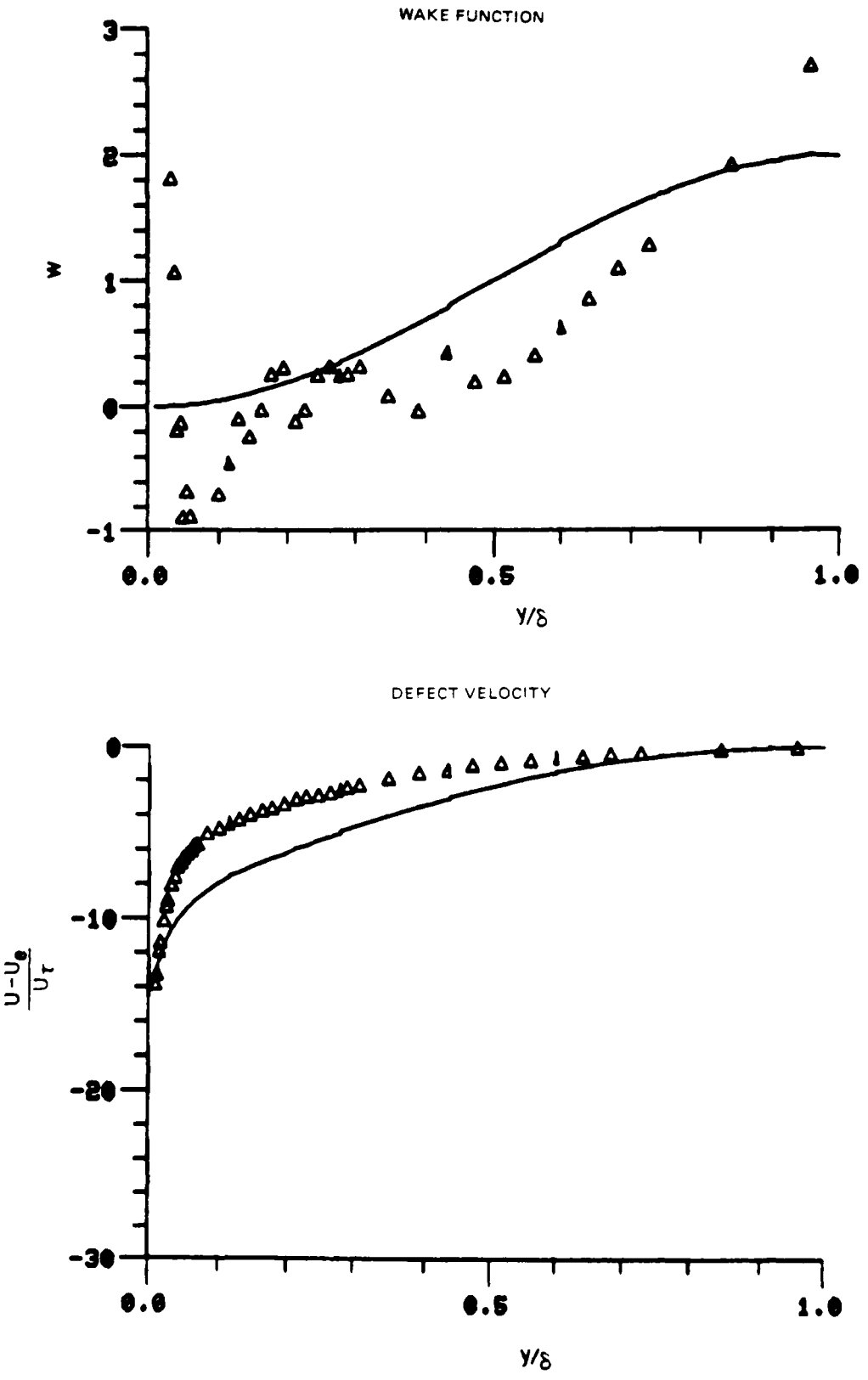
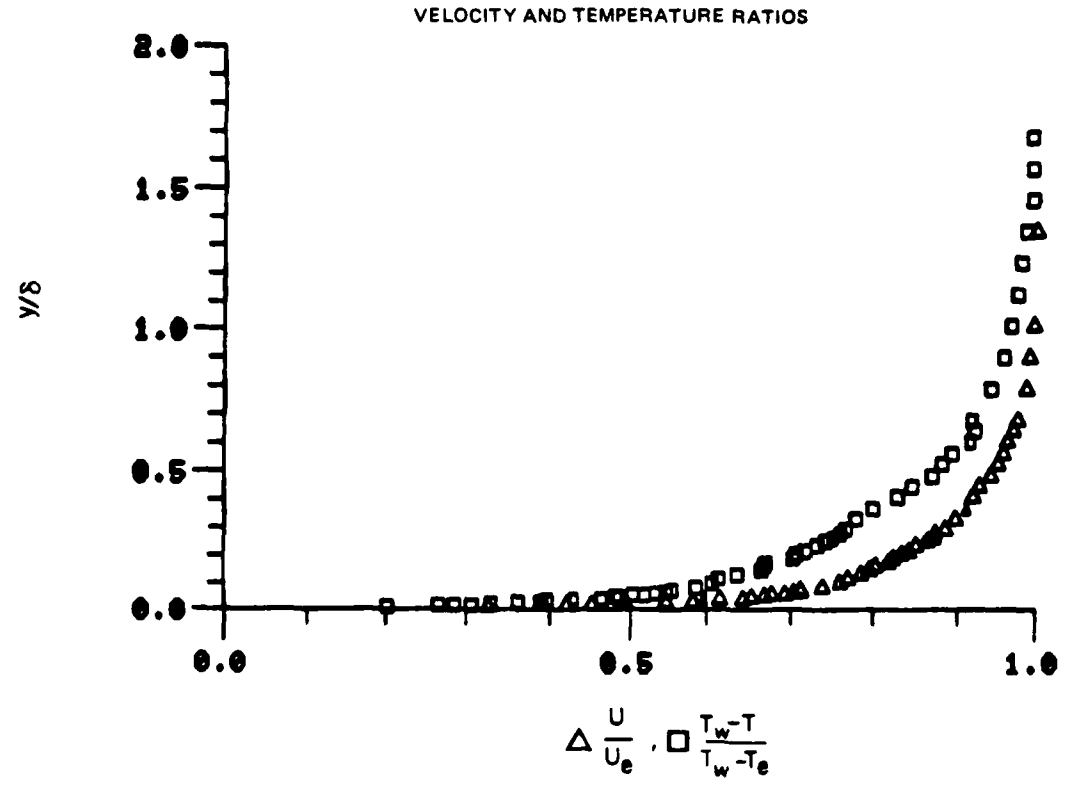


Figure 69. Boundary Layer Velocity Profiles
Run No.4 Point No.6

78-12-100-2



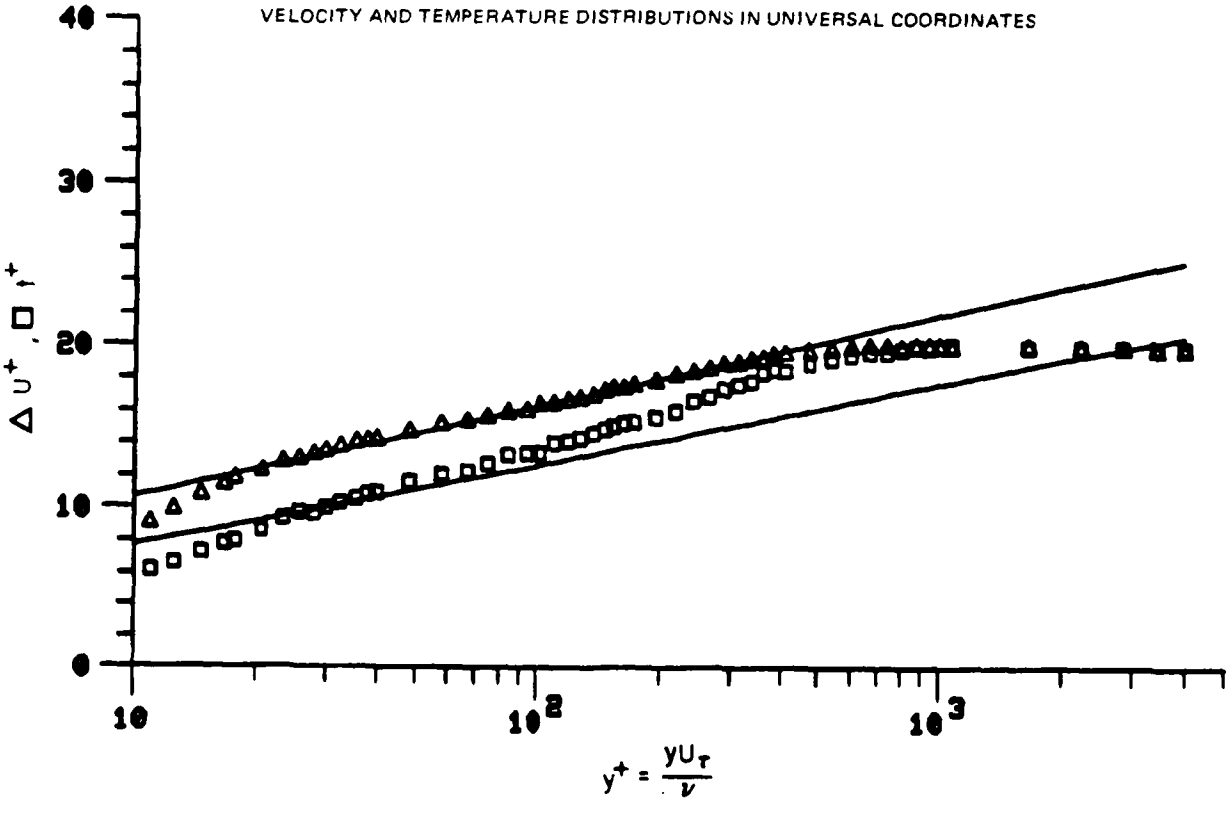
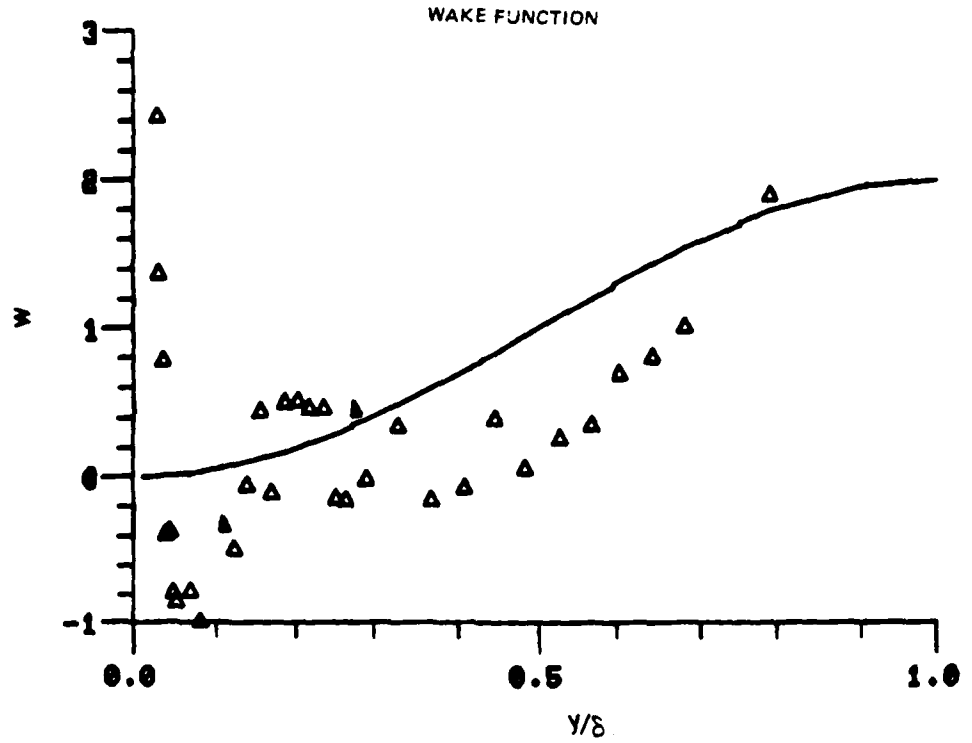


Figure 70. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No. 7

78-12-100-1



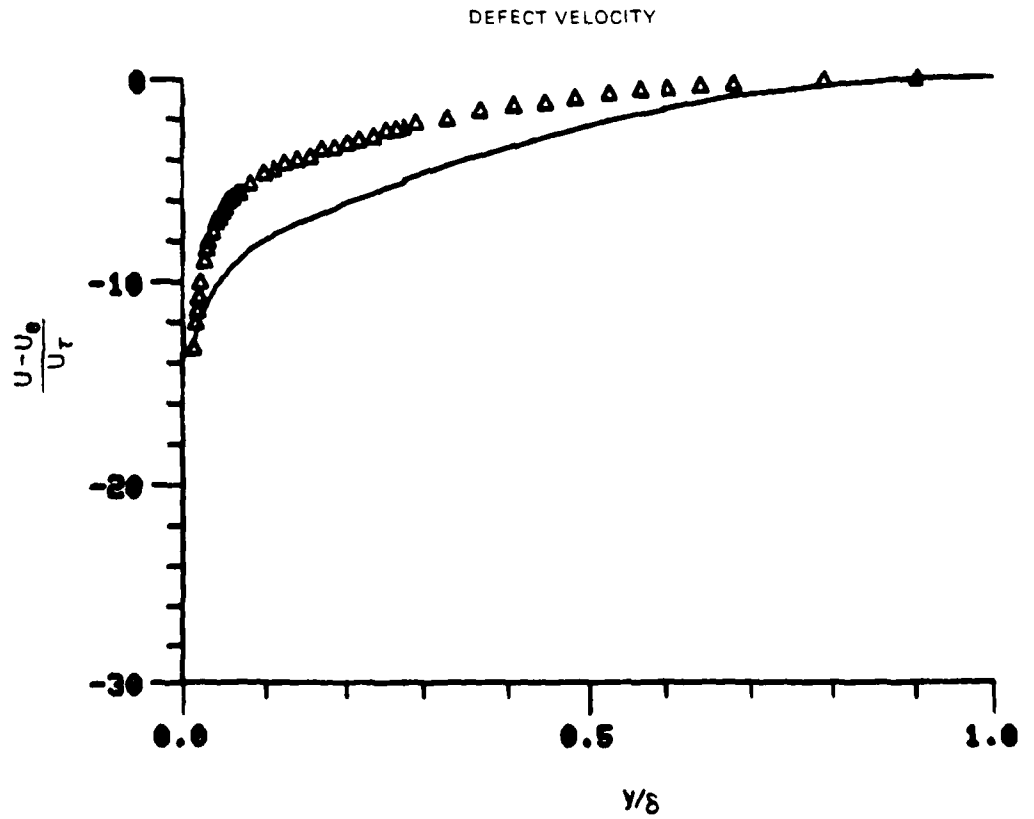
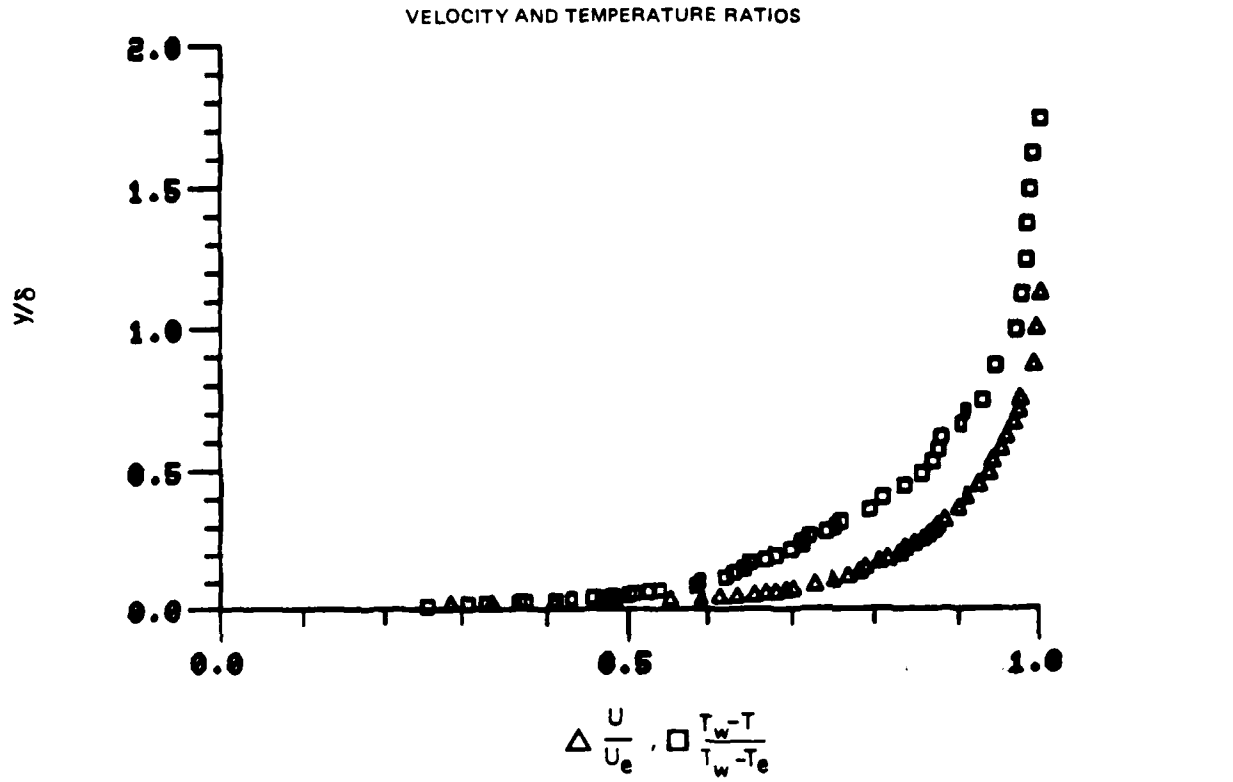


Figure 70. Boundary Layer Velocity Profiles
Run No.4 Point No.7

78-12-100-2



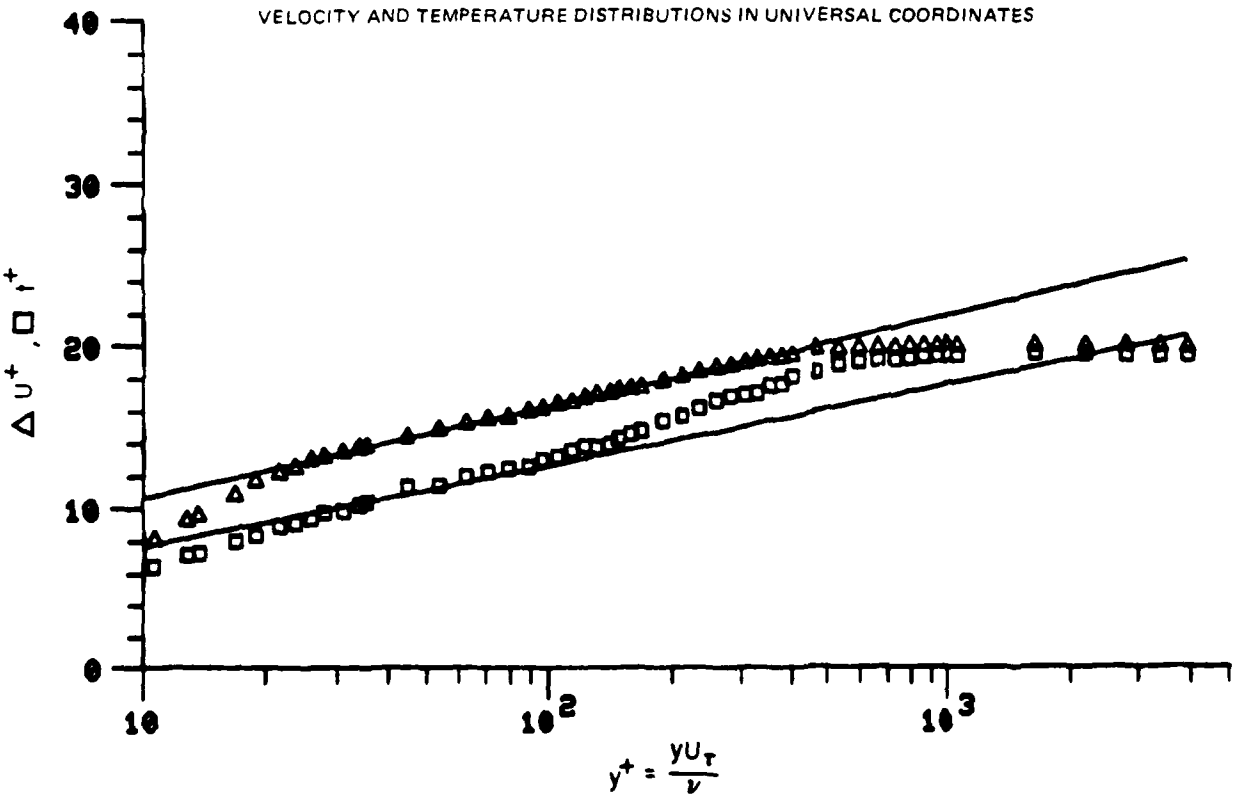
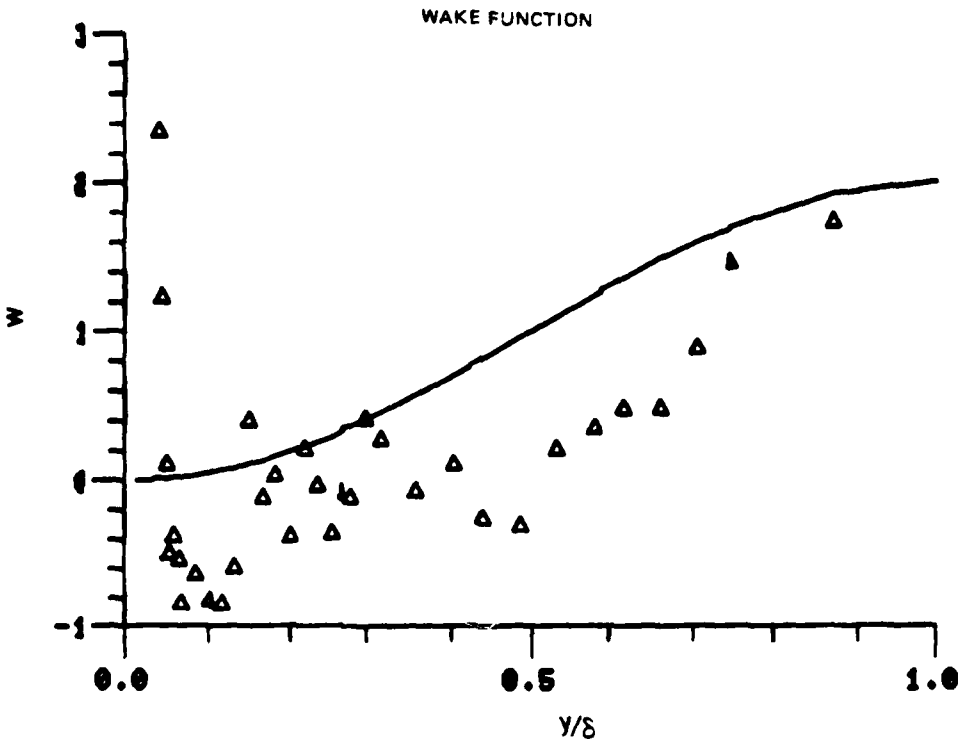


Figure 71. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 8

78-12-100-1



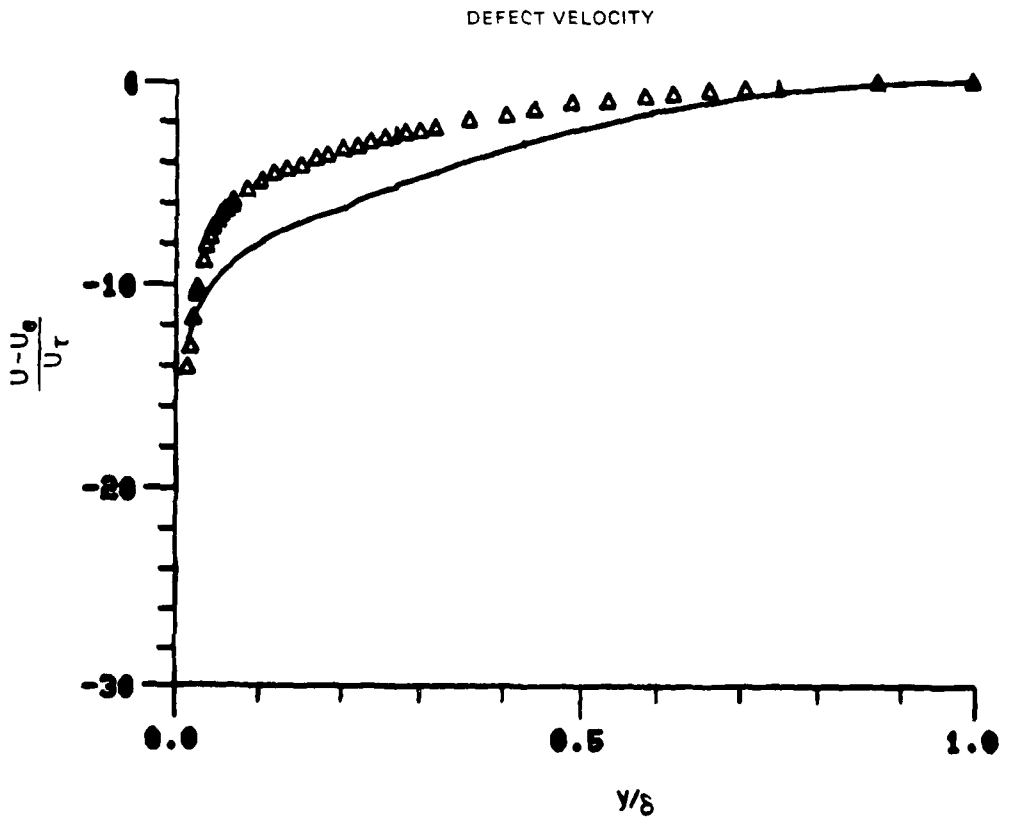
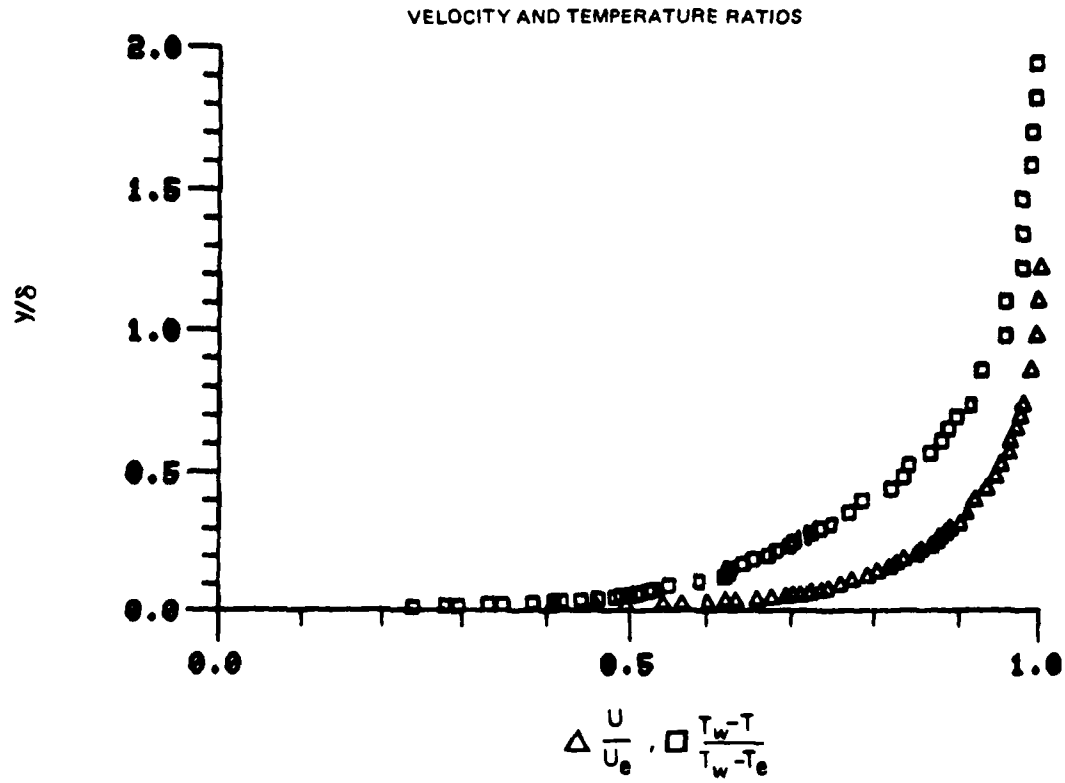


Figure 71. Boundary Layer Velocity Profiles
Run No.4 Point No.8

78-12-100-2



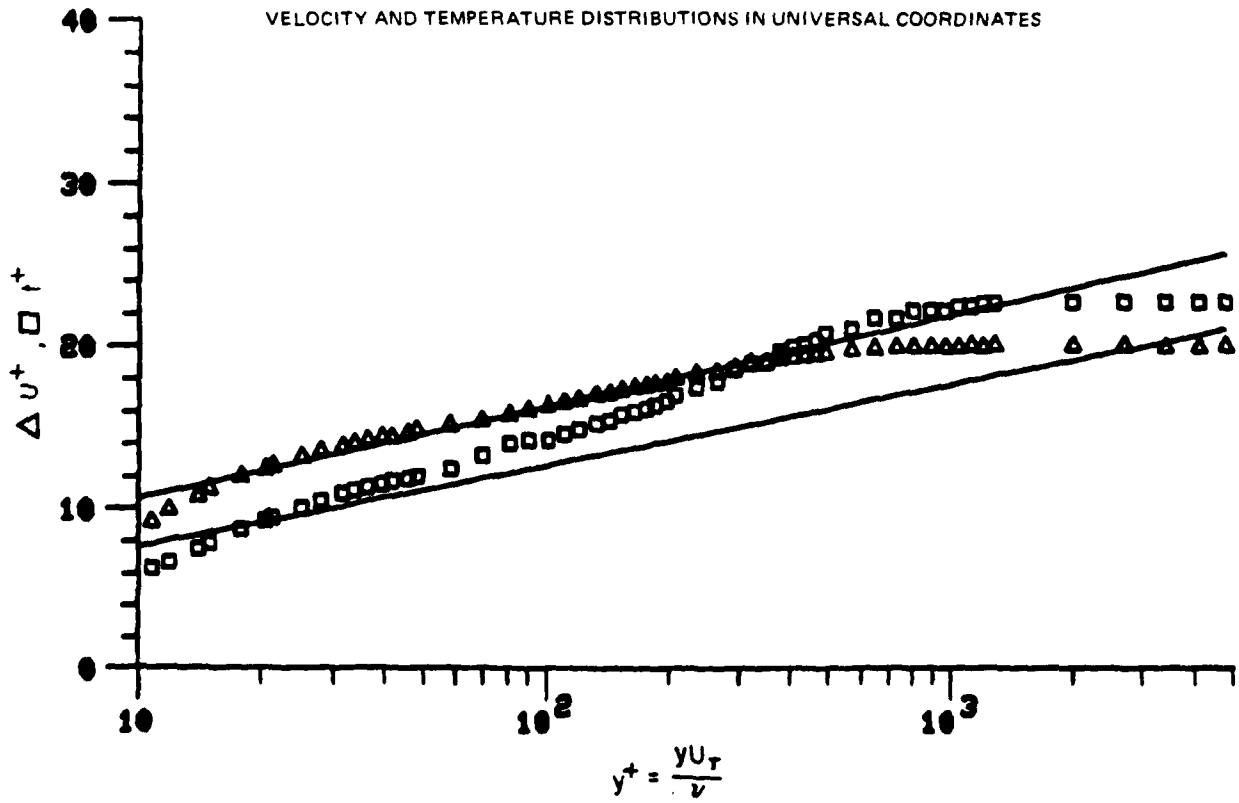
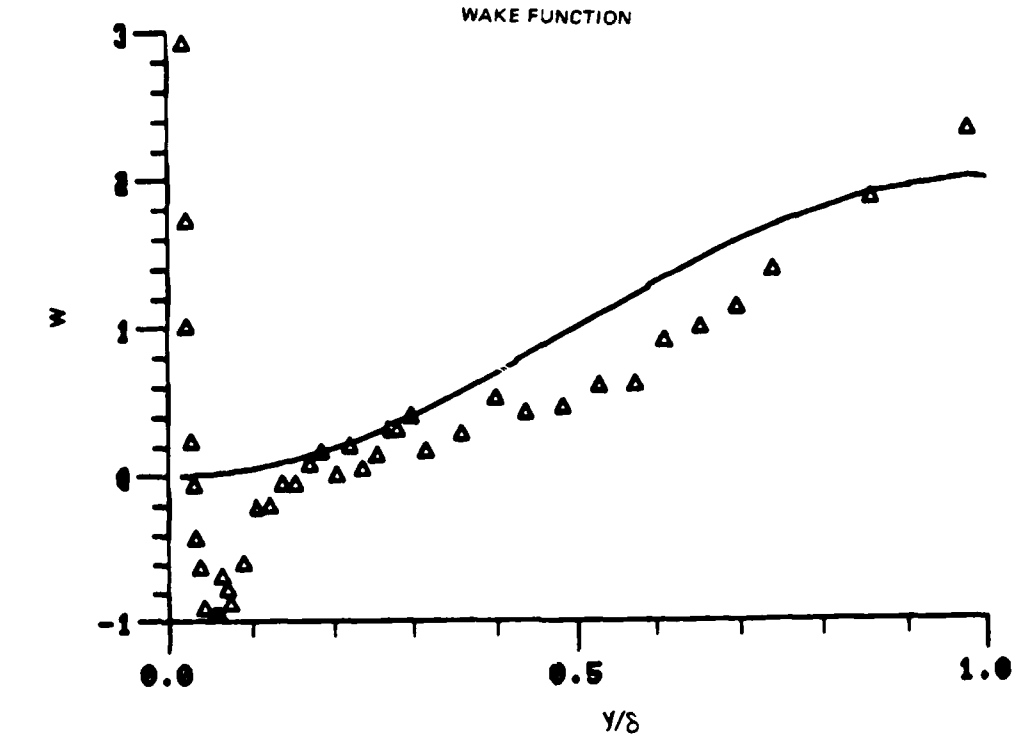


Figure 72. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No. 5

78-12-100-1



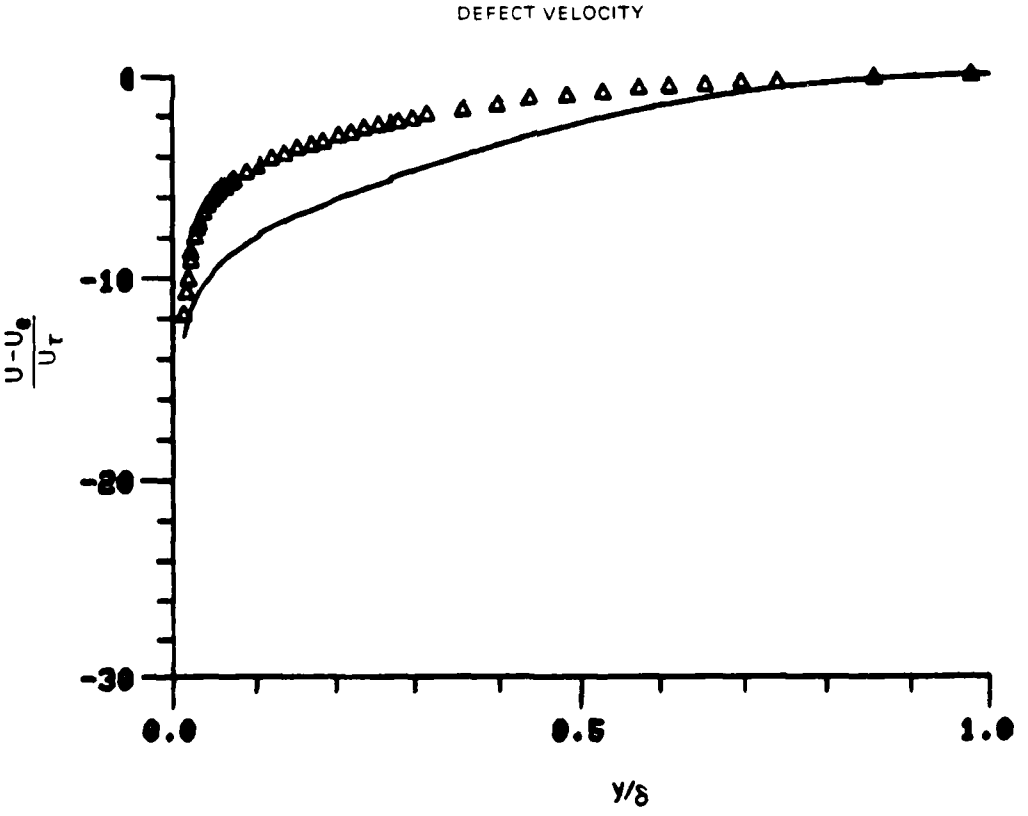
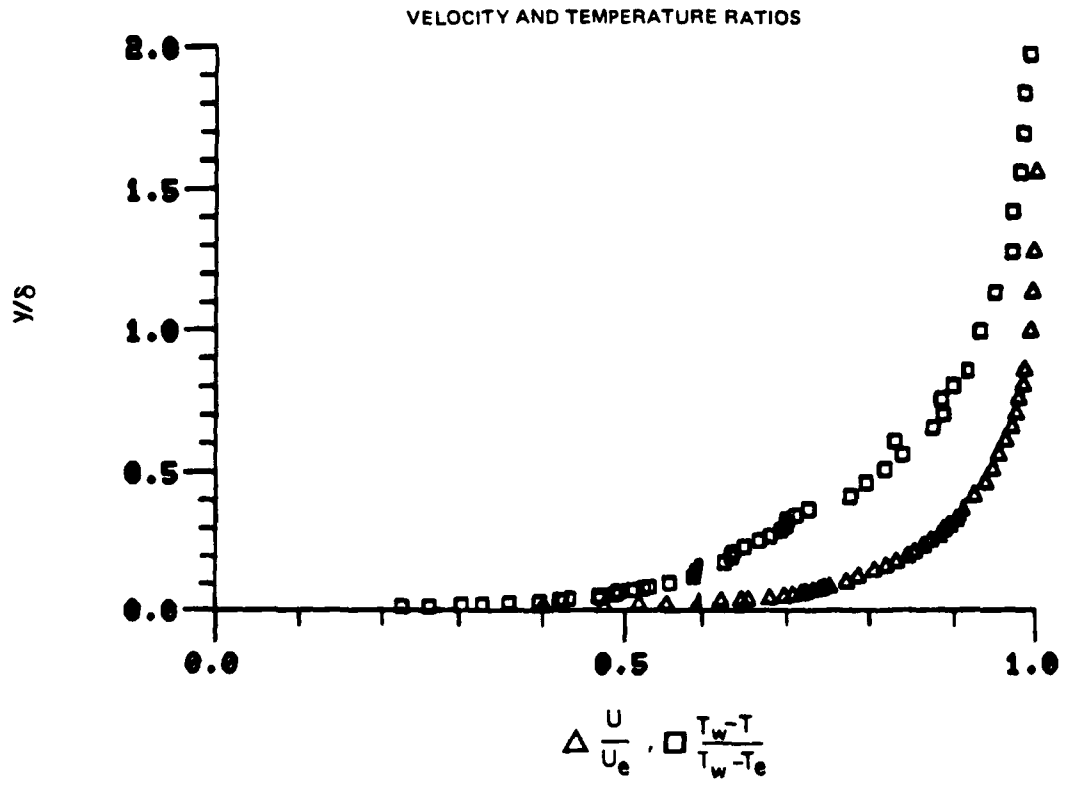


Figure 72. Boundary Layer Velocity Profiles
Run No.4 Point No.5

78-12-100-2



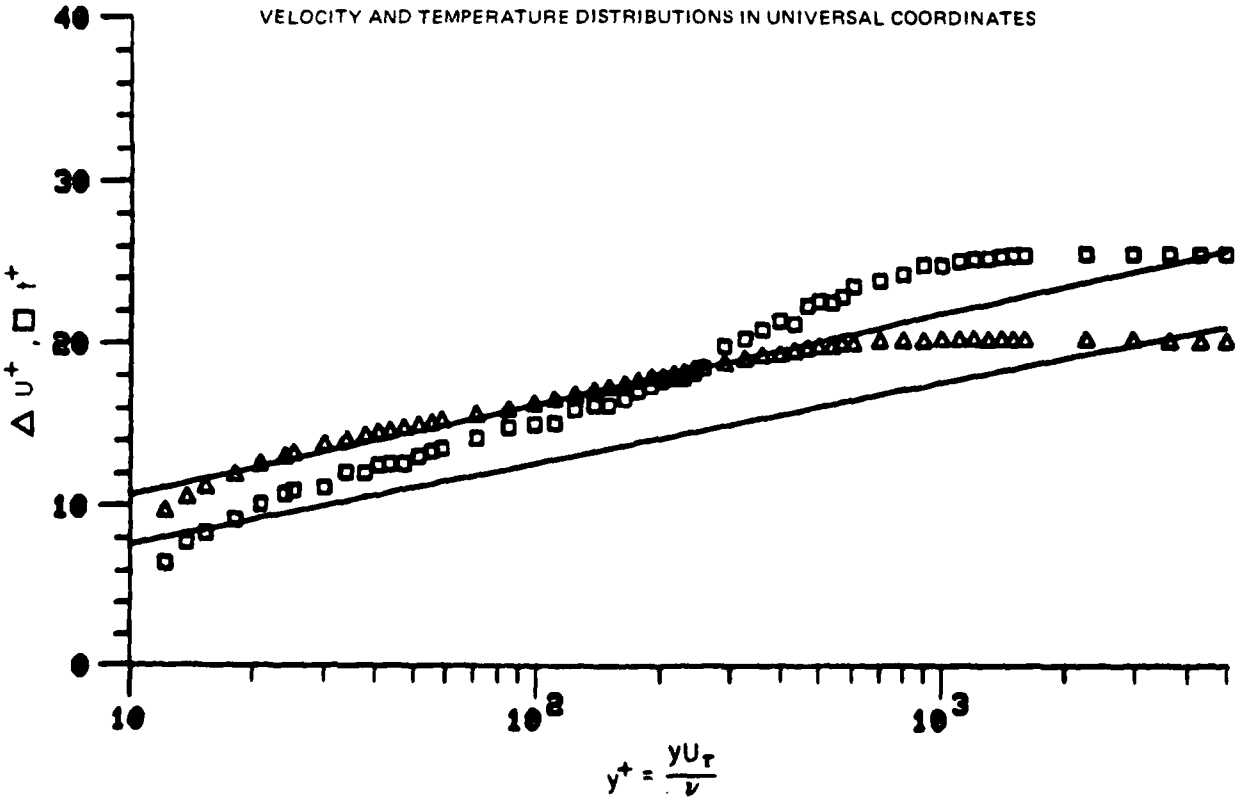
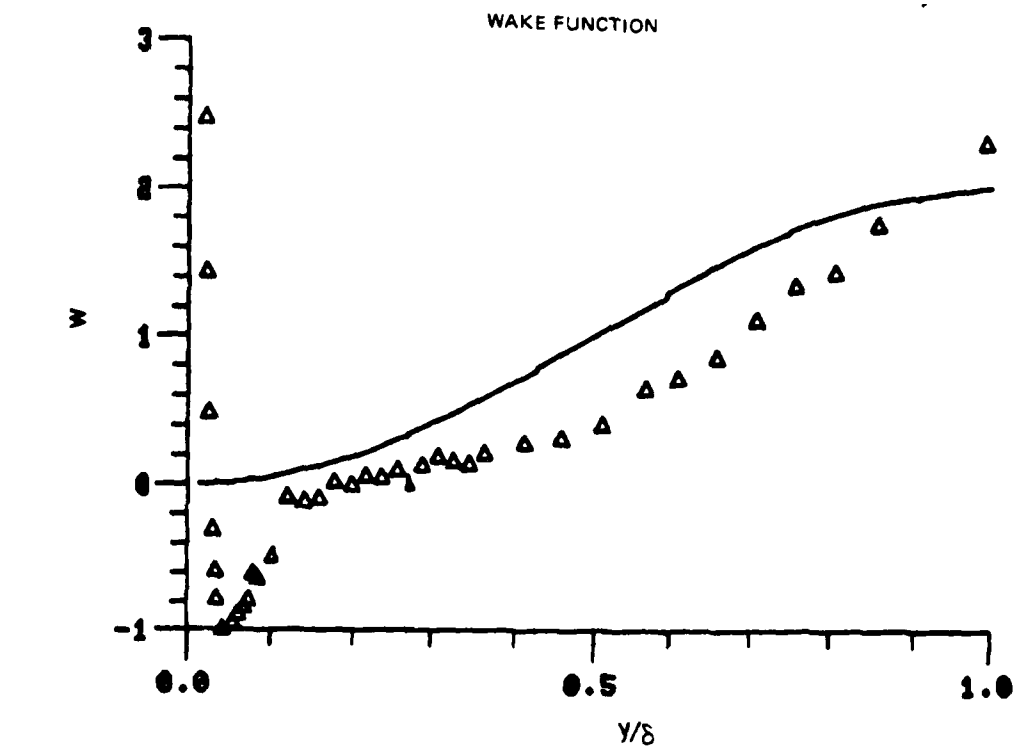


Figure 73. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 2

78-12-100-1



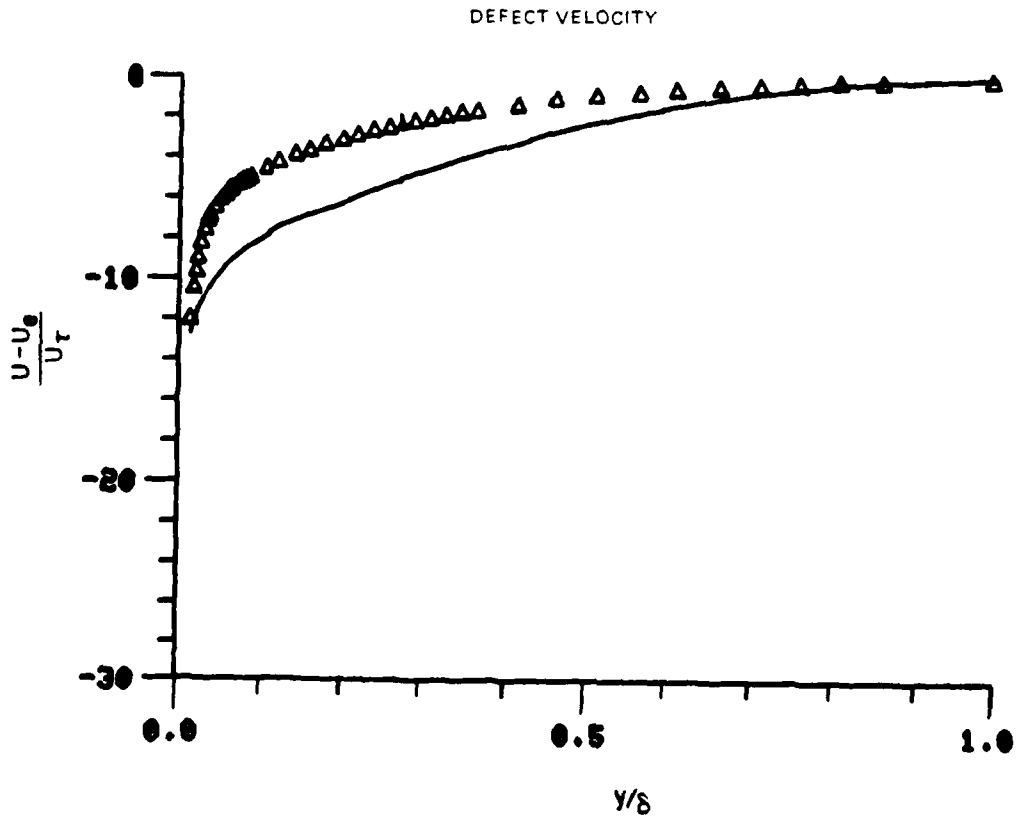
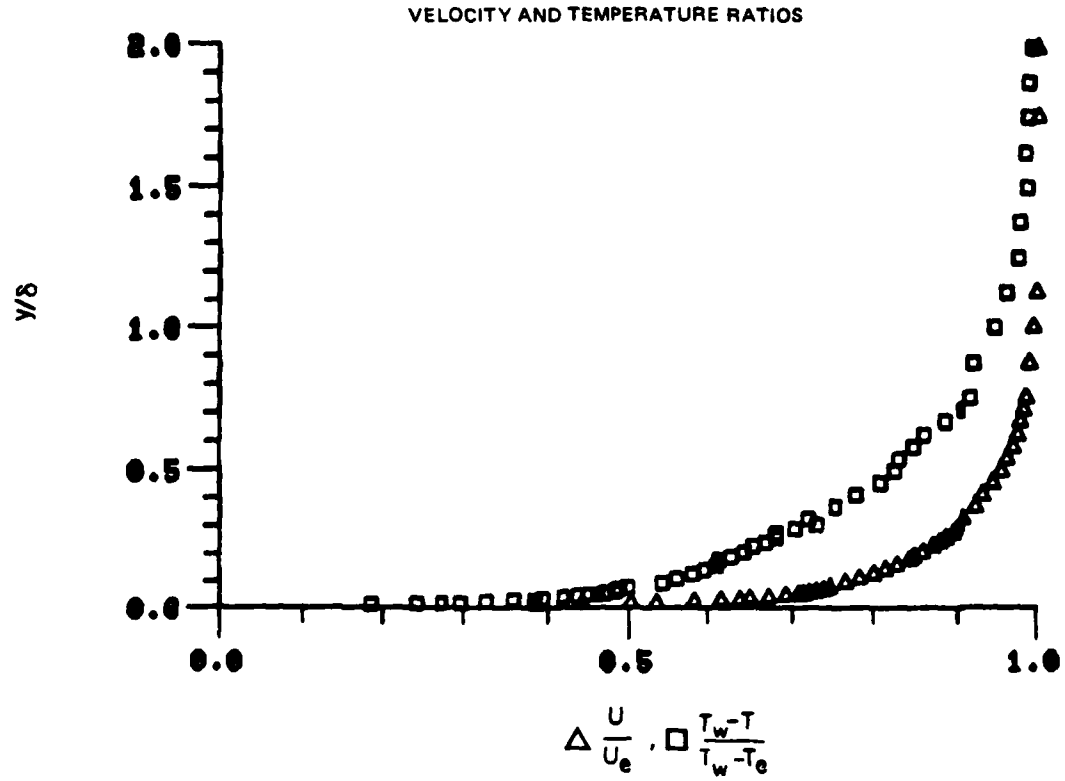


Figure 73. Boundary Layer Velocity Profiles
Run No.4 Point No.2

78-12-100-2



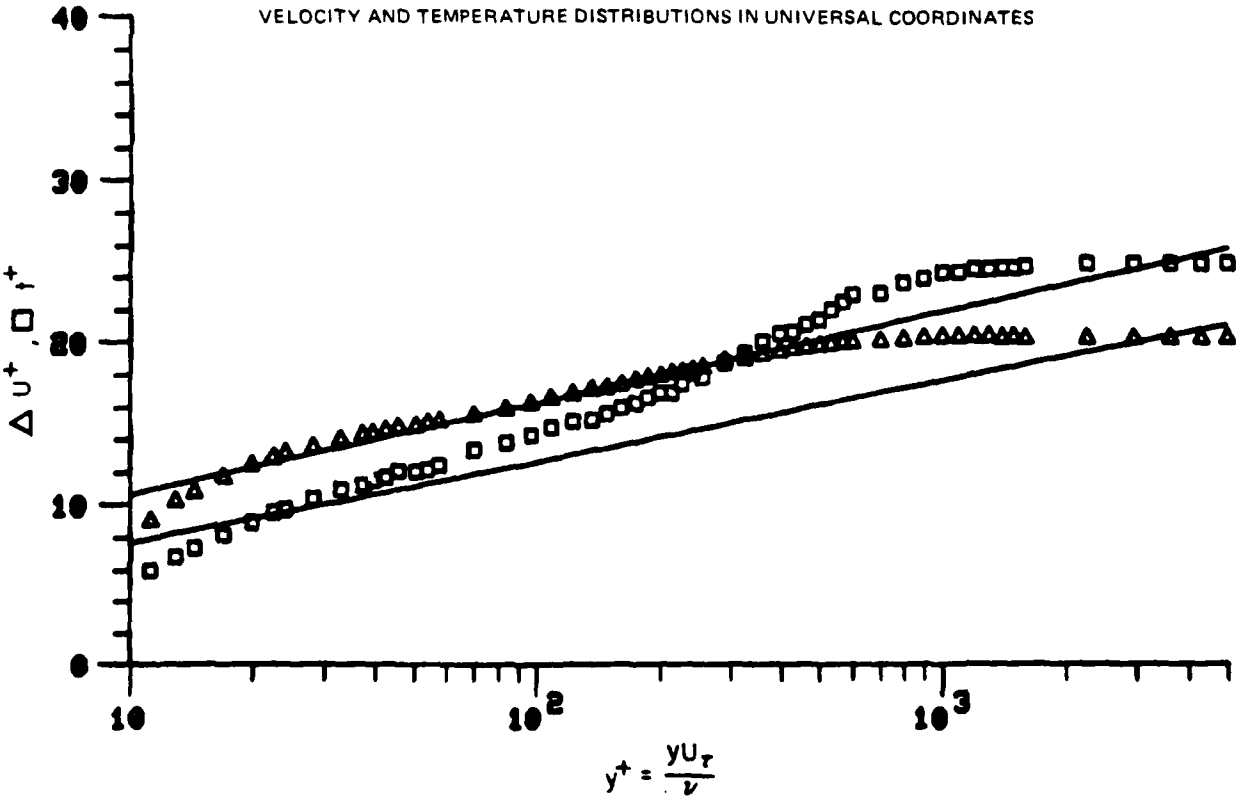


Figure 74. Boundary Layer Velocity and Temperature Profiles
Run No. 4 Point No. 3

78-12-100-1

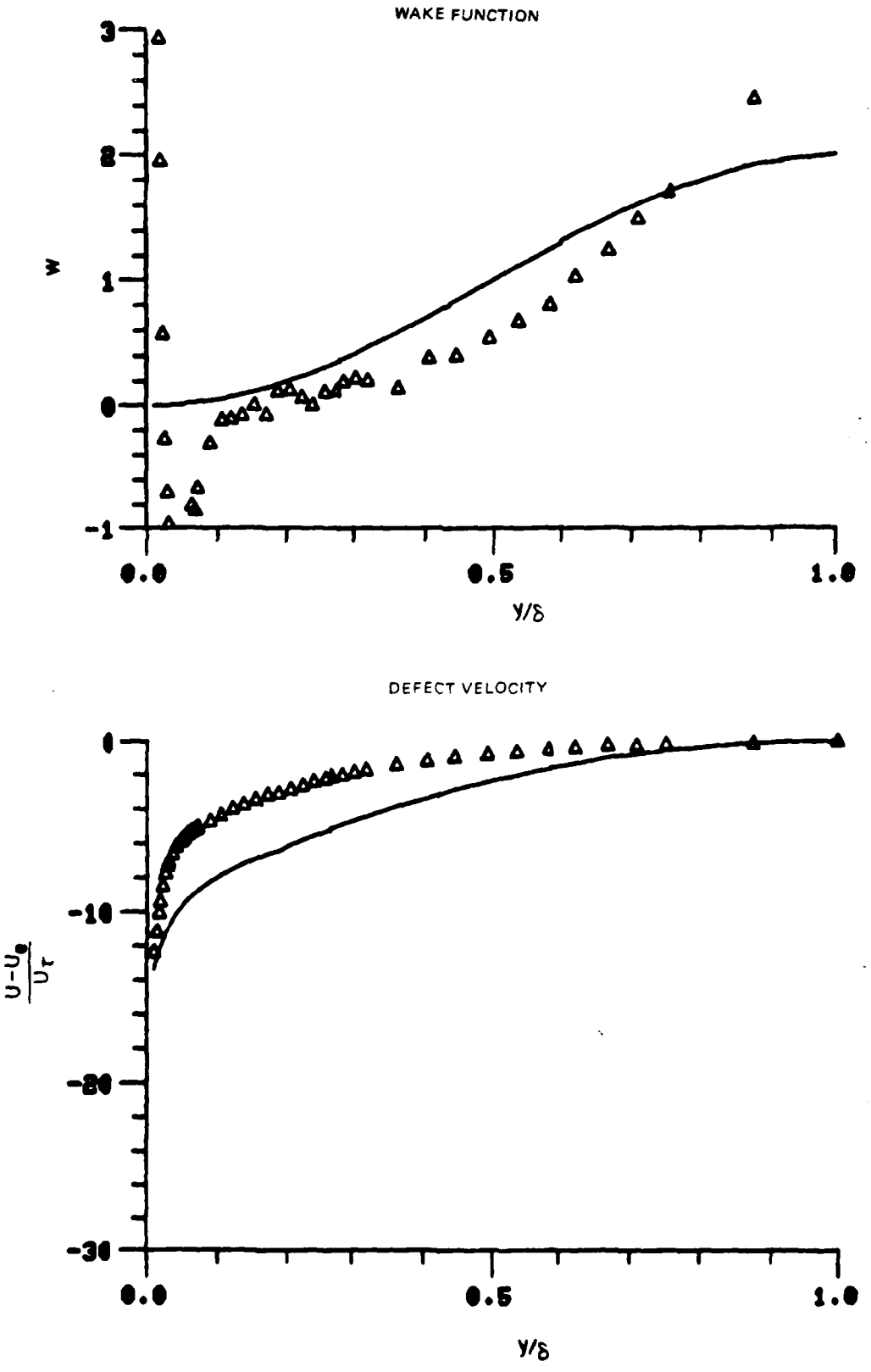
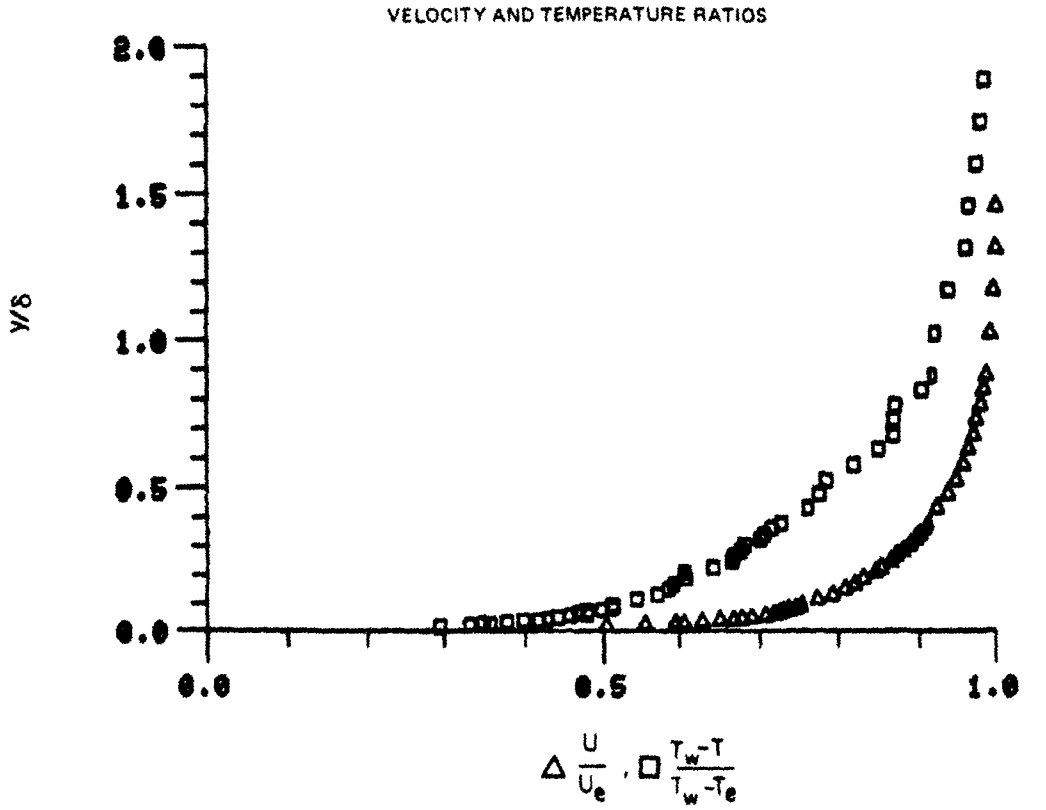


Figure 74. Boundary Layer Velocity Profiles
Run No.4 Point No.3

78-12-100-2



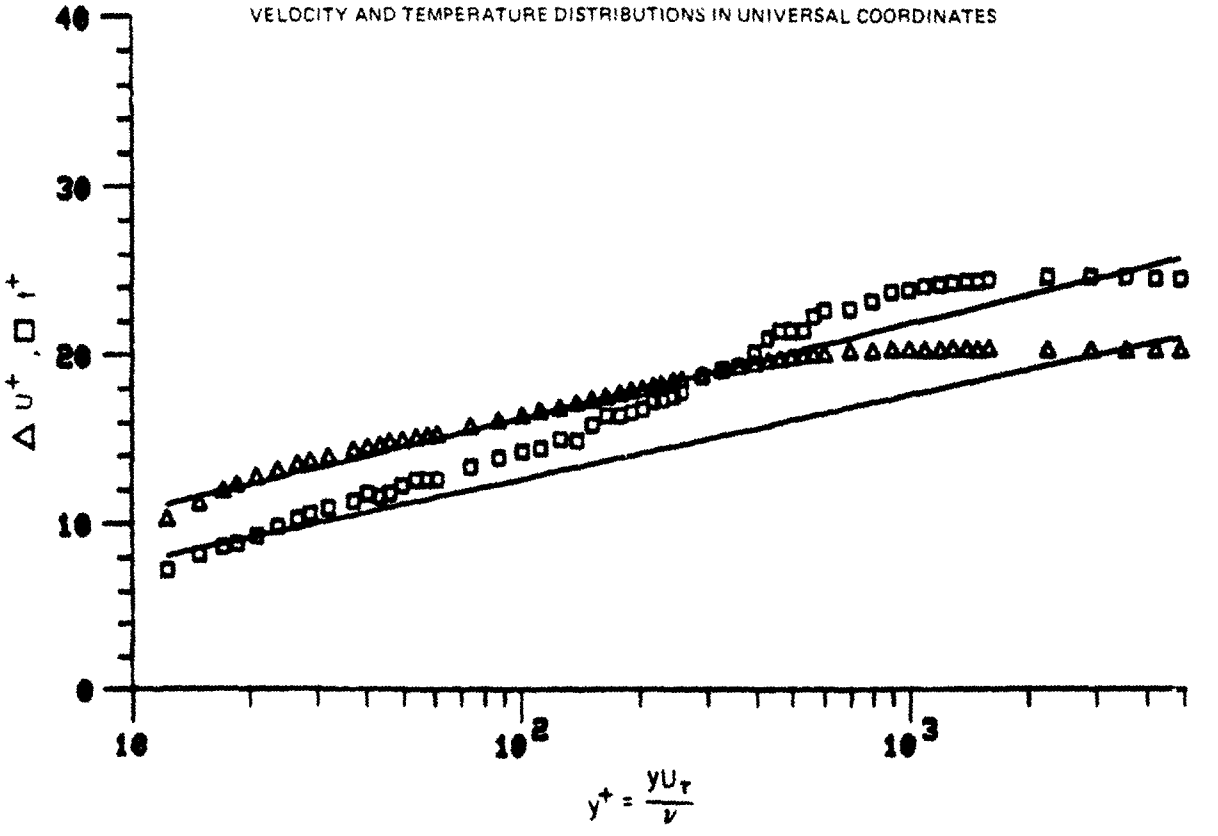


Figure 75. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No.4

78-12-100-1

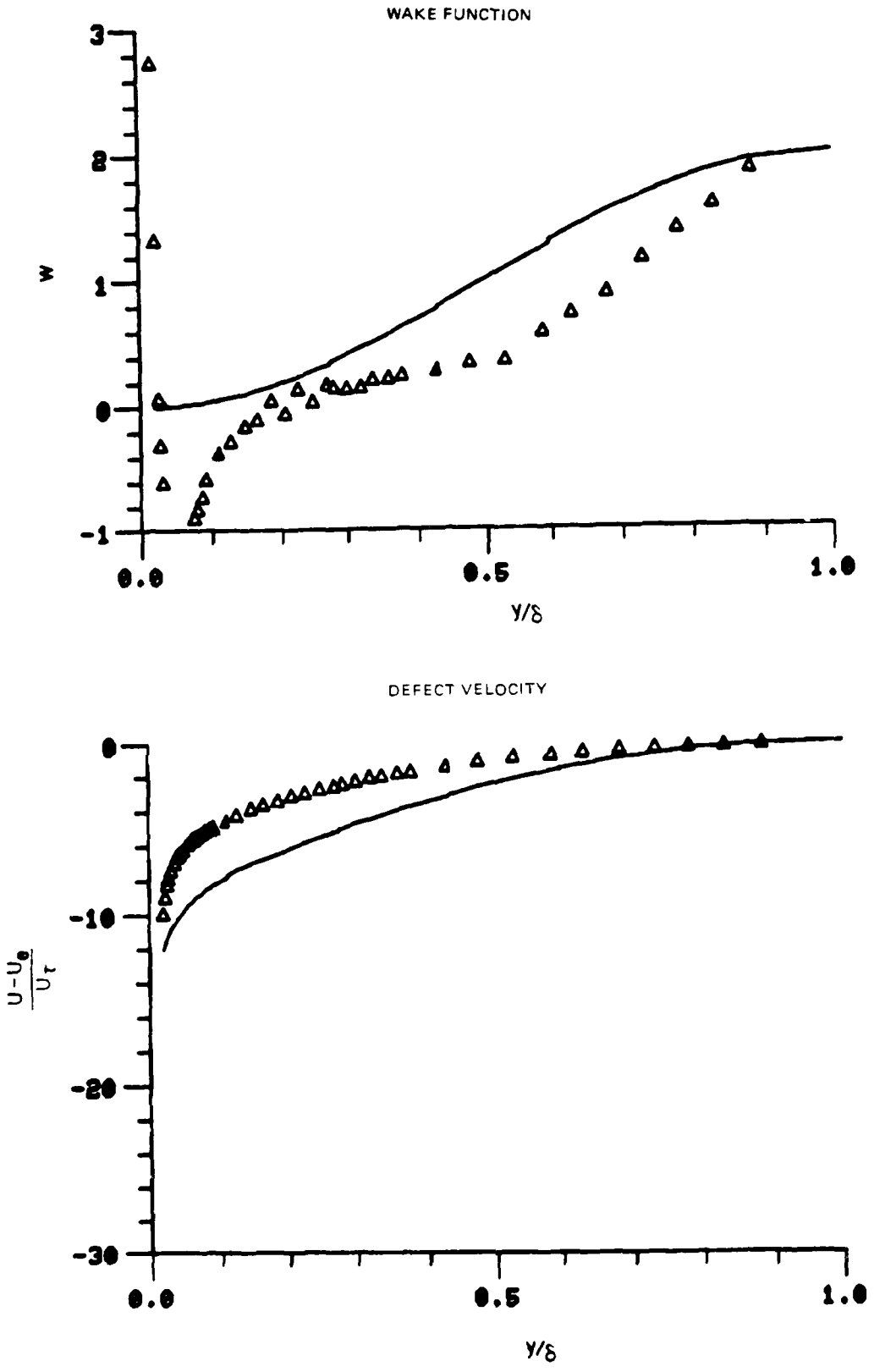
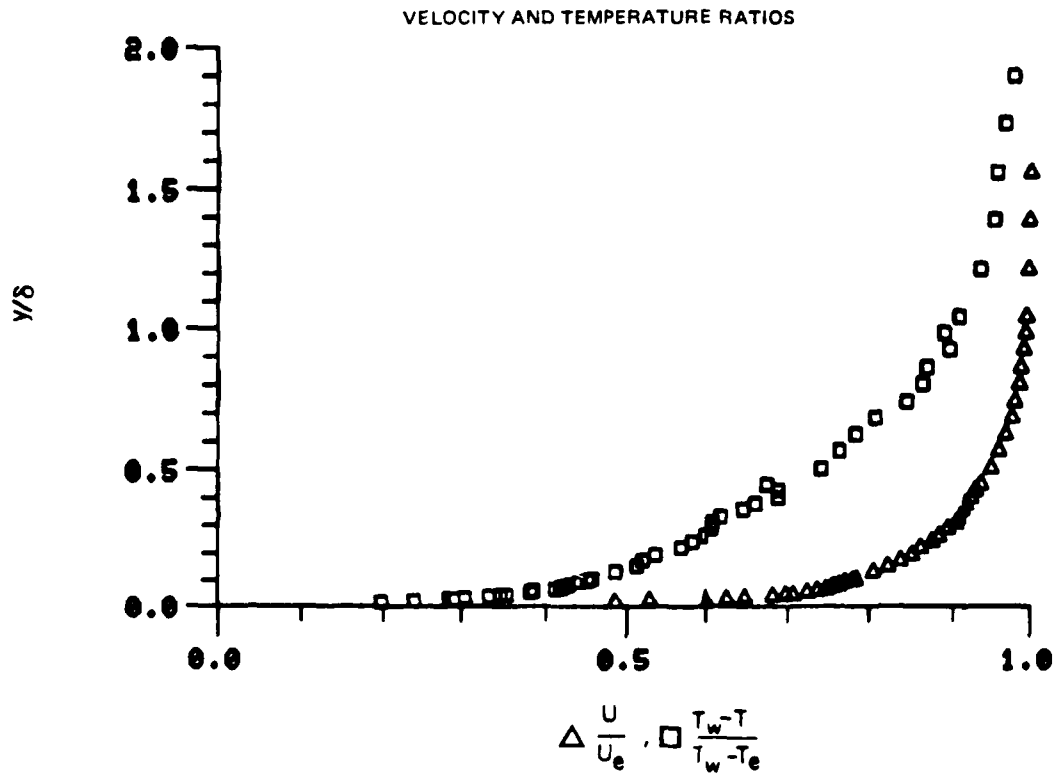


Figure 75. Boundary Layer Velocity Profiles
Run No.4 Point No.4

78-12-100-2



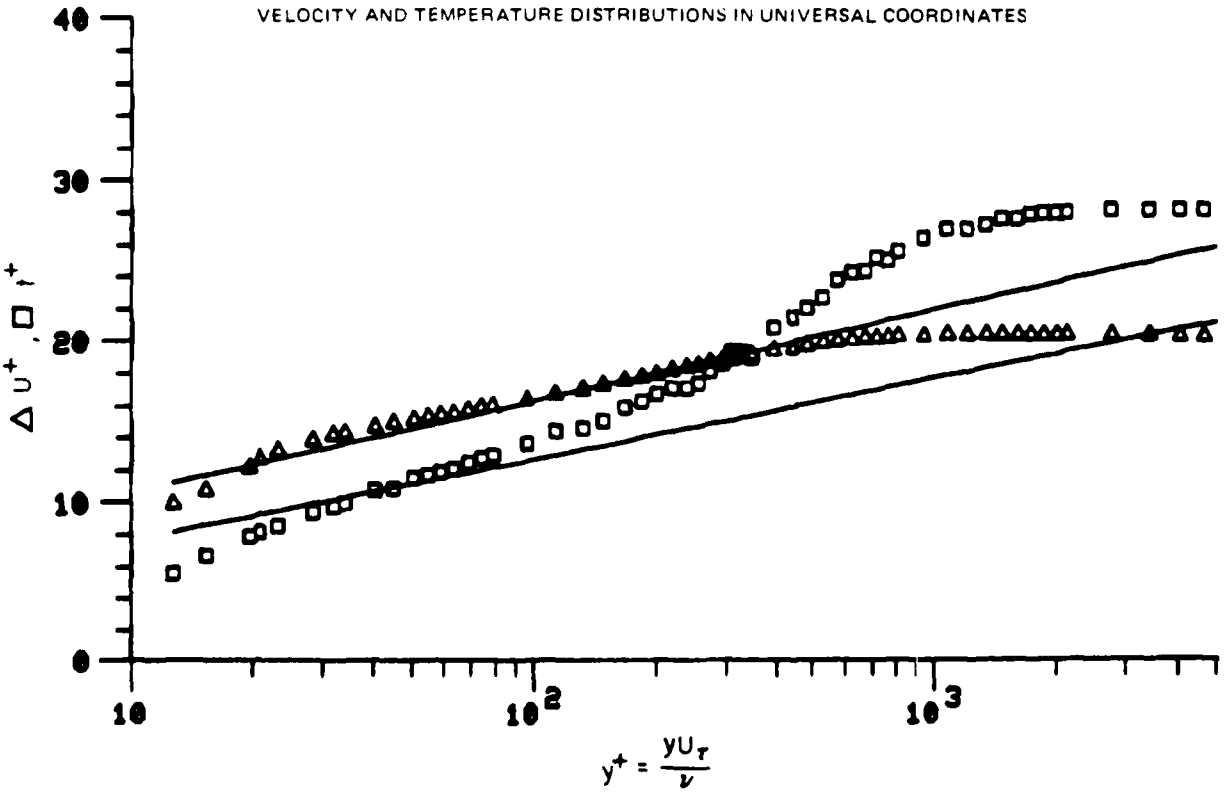


Figure 76. Boundary Layer Velocity and Temperature Profiles
Run No.4 Point No. 1

78-12-100-1

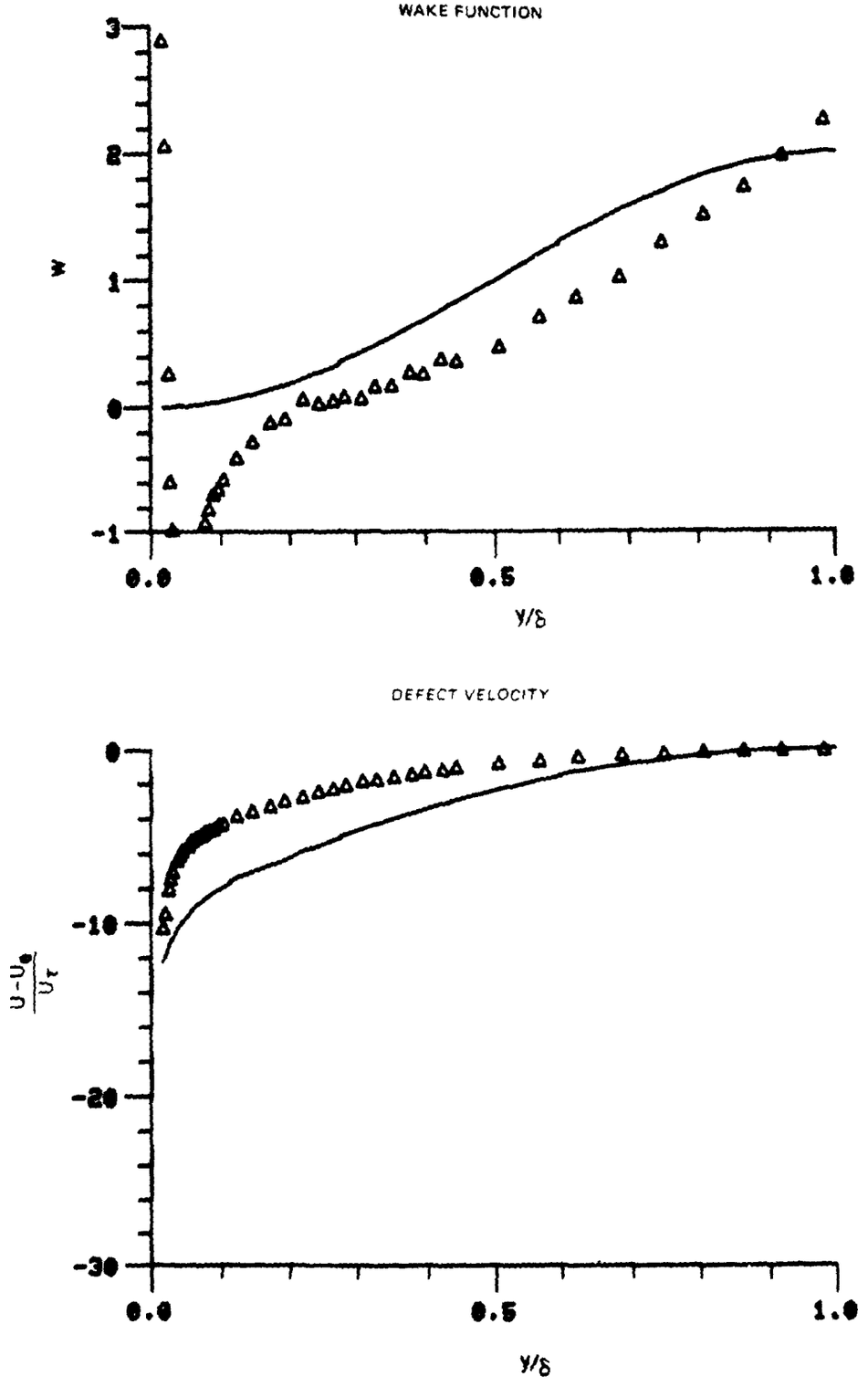


Figure 76. Boundary Layer Velocity Profiles
Run No. 4 Point No. 1

78-12-100-2